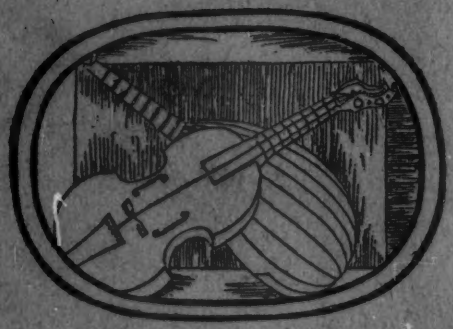
THE
Galpin Society
JOURNAL



MARCH 1950

III

THE GALPIN SOCIETY

★

PRESIDENT

Professor J. A. Westrup

VICE-PRESIDENTS

Mrs Arnold Dolmetsch Dr Rosamond E. M. Harding
Walter F. H. Blandford Adam Carse Christopher J. Galpin

COMMITTEE

Anthony C. Baines
Philip A. T. Bate
Max Champion
R. T. Dart
Robert Donington
Brian Galpin
Hugh Gough
Eric Halfpenny
Edgar Hunt
Lyndesay G. Langwill
E. Marshall Johnson
R. Morley-Pegge
F. Geoffrey Rendall
Maurice Vincent

HONORARY TREASURER

Lyndesay G. Langwill, 19 Melville Street, Edinburgh, Scotland

HONORARY SECRETARY

Eric Halfpenny, 258 Cranbrook Road, Ilford, Essex

EDITOR OF JOURNAL AND FOREIGN REPRESENTATIVE

R. T. Dart, 7 Adams Road, Cambridge

THE GALPIN SOCIETY was formed in October 1946 with the object of bringing together all those interested in research into the history of European musical instruments. Its name commemorates the pioneer work of the late Canon Francis W. Galpin; its aims are to promote the study of the history, construction and functions of instruments of music and all cognate subjects, and to further this research by the publication of a JOURNAL and by all other practicable means. The Society plans to compile and publish bibliographies, catalogues and monographs on organological matters.

The Society is non-profitmaking; application for membership may be made by anyone, irrespective of nationality or country of residence. The annual subscription (one guinea) entitles the member to one free copy of each number of the Society's JOURNAL for that year, and to a substantial reduction in the prices of the Society's other publications.

The Galpin Society

JOURNAL

AN OCCASIONAL PUBLICATION · NUMBER III · MARCH 1950

CONTENTS

Handel and the Clarinet: R. B. CHATWIN *page* 3

The Lute and Musick's Monument: DONALD GILL 9

Two Early English Harpsichords: FRANK HUBBARD 12

Fifteenth-century Instruments in Tinctoris's *De Inventione et Usu Musicae*: ANTHONY BAINES 19

James Talbot's Manuscript: ROBERT DONINGTON 27

Notes and Queries 46

Book Reviews 51

Books, Music and Periodicals received 57

The JOURNAL will appear not less often than once a year. It is issued free to full members of the Galpin Society; the subscription price to others will be one guinea a year post paid.

The responsibility for opinions expressed in contributions to the JOURNAL rests with the writers.

Material appearing in the JOURNAL is copyrighted by the Society and may not be reprinted without its permission.

R. B. CHATWIN

Handel and the Clarinet

It has often been stated that Handel did not write for the clarinet, but several well-known authors have expressed the opinion that certain parts composed by him were intended for this instrument. The evidence available to support this view is contradictory, and these notes are the result of an attempt to collect together and examine some relevant points of interest.

Handel may have intended that a clarinet (or clarinets) should be used in the following three works:

1. The opera *Tamerlane*, composed and first produced in 1724;
2. The opera *Riccardo Primo*, composed and first produced in 1727;
3. A score in three parts headed *Overture*, MS 30.H.14, pp. 17–23, in the Fitzwilliam Museum, Cambridge. This is undated.

The clarinet was probably invented between 1700 and 1707. Scarcely anything is known to have been composed for it until about 1740 but there is evidence to show that between 1720 and 1730 it was beginning to come into use on the Continent.

It is therefore not impossible that clarinets could have been available when *Tamerlane* was first produced and also when *chaloumeaux* were indicated in *Riccardo Primo*, the latter being of interest because this word may mean *clarinets*. In connection with the Fitzwilliam *Overture*, it is particularly interesting to recall a newspaper announcement[1] of a Dublin concert of 1742, when solos on a *clarinet* and on a *shalamo* were played as separate items on the programme.

TAMERLANE

R. A. Streatfeild, in his well-known book *Handel*,[2] says: '*Tamerlano* affords an instance of Handel's employment of the clarinet. . . . In the autograph, the pastoral air "Par che mi nasca . . ." is accompanied by two *cornetti*, but in one of Smith's copies the *cornetti* are replaced by *clar et clarin* 1 *et* 2. Possibly some German musicians may have brought over specimens of the new instrument, and Handel, always ready for new experiments in orchestration, gave them a trial.' In *The Musical Antiquary* of 1911, Streatfeild goes so far as to remark that although Handel had originally assigned some parts in this opera to *cornetti*, he had sanctioned the alternative use of clarinets when the opera was first produced in 1724, and he adds: 'As these parts are not

the kind that would be given to the clarion, it is evident the clarinet was used by Handel.'

Streatfeild was not the first to suggest that Handel made use of the clarinet. Schoelcher, in the appendix to his *Life of Handel*[3] (1857), mentions that Lacy, responsible for the production of some of Handel's operas at Covent Garden *circa* 1830, found in the original MS that the air 'Par che mi nasca' has for the principal part of its accompaniment '*cornetti* 1 *et* 2', which in Smith's copy, he said, were replaced by *clar et clarin* 1 *et* 2. Schoelcher remarks that these parts could only be played by hautboys or clarinets, and adds: 'Certainly the *clar et clarin* of Smith's copy is only an abbreviation for *clarinettes*.'

The only transcription of *Tamerlane* known to give an indication for these particular parts is in the Granville collection of the British Museum[4]; in this, the parts are marked *Clar* 1 and *Clar* 2. No trace can be found of a transcription with the words given by Streatfeild and Schoelcher in the same form and spelling, and one must therefore presume that this is the MS to which they referred. It is considered to be in the handwriting of Smith, Handel's amanuensis; but it is neither signed nor dated. The date given in the British Museum Catalogue of MSS is 1724, but it is understood that when fixing this date it was assumed that Smith always made his copies when the work was first produced; *Tamerlane* was revived over and over again and other copies must obviously have been needed. Another point relevant to the date of this particular MS is that it is not one of those which Smith presented to George III; consequently it may have been especially copied for Granville, who survived Handel for some years, at a time when the clarinet had been given a permanent place in the London opera orchestra.

Although Streatfeild thinks that these parts would not be given to trumpets, it has been maintained that skilled *clarino* players of that time could have played them; it is, however, extremely improbable that two trumpets would have been used as an accompaniment for a vocal part of this kind. It seems that Handel originally intended to use cornetti (as his autograph shows); since players could not be found—or perhaps they were not good enough—the parts were played by the violins, as shown in the printed score and in the other transcriptions. Later, perhaps between 1760 and 1770 when the opera was revived again, clarinets were available and were used. Smith, then making a transcription and being aware of the change, would make the alteration; yet it is very unlikely he would do so unless he knew that Handel had wished to authorize the use of clarinets.

Dr Burney, writing about John Christian Bach's opera *Orione*, when

it was first produced in 1763,[5] remarked that 'clarinets were then being used for the first time in our opera orchestra'. The value of this statement is considerably lessened by the knowledge that clarinets were probably used in Arne's *Artaxerxes* (1762) and (on the stage) in his *Thomas and Sally* (1760); perhaps he meant as *regular* members of the orchestra? Curiously enough he mentions he had never seen a full score of *Tamerlane*, but if clarinets had been used as early as 1724 in this opera, he would no doubt have known about it.

RICCARDO PRIMO

Schoelcher was perhaps the first writer to mention that in the Handel autograph MS of this opera there were parts headed by the word *Chaloumeaux*. He remarks that as these instruments were not available when Lacy revived the opera in about 1830, clarinets were used instead.

This autograph is preserved in the British Museum.[6] On page 109, there is a passage headed *Chaloumeaux*, and this is evidently the indication referred to by Schoelcher.

The autograph is incomplete; in fact it appears to be a series of sketches rather than the complete score. The words which the *chaloumeaux* accompany are 'Quell' innocente afflitto . . .'. Neither these words nor any mention of these instruments appear in the early printed editions and likewise they are not in the transcriptions. In the complete editions—but missing from the autograph—is an air 'Quando non credo . . .' and here the first few bars of the accompaniment are very similar to the *chaloumeaux* parts, although the indication given is now *hautboys*. It may be suggested that Handel used the word *chaloumeaux* to indicate *hautboys*, but this is unlikely as he often used the latter word in his scores. Parts for a *chalumeau* (spelt also *shalamo*, *scialmo*, etc.) are to be found in twenty or more surviving scores, by well-known composers of the early eighteenth century; but although there is a not inconsiderable amount of information about it in contemporary music literature, it is impossible to say with certainty what instrument was intended.

One suggestion, first made by Curt Sachs, is that *chalumeau* was an early name for the clarinet; this would overcome many difficulties, but why was the range of notes written for it always limited to a twelfth, and why were the *chalumeau* and the clarinet always mentioned as separate, distinct instruments?

A second suggestion is that the *chalumeau* was a single reed instrument with a compass limited to about a twelfth, as described by

Diderot[7] in about 1750 and as given an established place in music reference books by Victor Mahillon[8] in about 1880. If the latter's able and ingenious explanation is correct, at least three different sizes would be required: the smallest only about 10″ long for some works by Hasse and Telemann and the largest probably over 3′ long for some works by Graupner. But as the *chalumeau* was much in use *c.* 1730, much more so we believe than the clarinet, how is it that this new single-reed instrument was not more prominently described? And why have none of the smallest and largest sizes survived?

A third suggestion is that the *chalumeau* was a double-reed instrument—as H. C. Koch[9] and other writers have described it. It cannot have been the hautboy or the ordinary schalmey, as they are often mentioned together with the *chalumeau*, but several families of double-reed instruments were made in sizes that would cover the range required: from *C* up to *c‴* (and in one case to *f‴*).

The *chalumeau* parts in *Riccardo Primo* extend in solo passages from *d′* to *g″*, which seems to imply that either the second or third suggestion is correct, but after the direction 'Tutti: V. et Chal. 1.', a compass *d′* to *c‴* is required, when the first or third suggestion is indicated. Perhaps further research may elucidate the contradictory evidence which at present makes a correct definition of a chalumeau impossible.

THE FITZWILLIAM OVERTURE

This score is in three parts, headed:

Clarinet 1.
Clarinet 2.
Corno di Caccia.

According to the opinions of several Handel experts, it is undoubtedly an autograph Handel MS. In his notes in the catalogue of music at the Fitzwilliam Museum,[10] Dr. A. H. Mann, the well-known authority on Handel, suggested that these parts are a section only of the orchestration of an overture, and that string parts, which have probably existed, are now missing. On the other hand, a well-known authority on scores of this period has made a careful examination of the score and has given an opinion that the existence of other parts is very unlikely. Had such parts existed, there would have been some rest bars in the wind parts, whereas the three parts are musically complete as they now stand. The word *overture* certainly suggests a larger combination of instruments, but in Handel's time this word had not attained the rather exact significance that was given to it a little later.

Here seems to be a definite instance of the use of the clarinet by Handel. Streatfeild and others have supported this view, but some

writers have firmly maintained that the word *clarinet* in scores composed before about 1770 was used to indicate high pitch trumpets. The opinions of experts in orchestration and players of high trumpet parts agree that, although it is possible these *clarinet* parts could have been played by exceptionally skilled trumpet players, it is very unlikely that two trumpet type instruments would be used together in such a very fully written score.

Unfortunately, this MS is not dated. Dr Mann estimated that it was written in about 1740, but he does not give his reasons. Bound in the same volume are six pages of the well-known concerto in D, No. 5 of the Twelve Grand Concertos, also used as the *Overture to St Cecilia's Day*; page 12 of this MS bears the signature 'G. F. Handel, Oct. 10, 1739'. A comparison between the two scores shows that the music writing is in many points similar, but Handel's writing retains this similarity during many years; no clue as to the date has come from a study of the style of the two works, as their nature is so different. So it must be concluded that Dr Mann when deciding upon this date was influenced to a great extent by his intimate knowledge of the composer's life and work; present-day students of Handel have agreed that this date must be approximately correct.

If the first two parts of this score were intended for clarinets, it is difficult to decide what kind of instruments were used. Played as written, on C clarinets, both the $b'\natural$ and the $c''\sharp$ were constantly required. According to contemporary fingering tables, $b'\natural$ could only be obtained on a 2-keyed clarinet by fingering $c''\natural$ and then dropping the note a semitone with the lips. The same tables omit any fingering for $c''\sharp$. It is, however, possible that the speaker key-hole might have been tuned to give $b'\natural$ instead of $b'\flat$, as on the Denner 2-keyed instrument (before the War at Munich)[11]; but $c''\sharp$ could only have been attempted by 'half-holing' and the result would hardly have inspired Handel to write for the instrument. It must therefore be presumed that if C clarinets were intended, 3-keyed instruments were used. The third key, besides giving the $b'\natural$, would be used to get $c''\sharp$ by closing it when $d''\natural$ was fingered; the note thus obtained, if not exact, might be capable of being played in tune.

If C clarinets were intended, it is strange that Handel should have chosen the key of D major, which cannot have been a good key on any of the early type clarinets. It may therefore be possible that these parts were written for D clarinets. If D clarinets were then in use, their players would doubtless be accustomed to transpose at sight; and finding themselves playing in C major, the above-mentioned difficulties would be reduced to a minimum.

There can be no doubt that Handel knew the clarinet, and, as we see from these three scores, he was interested in trying it out (or in one case a rather different instrument, the *chalumeau*—whatever that may have been). More than that we cannot say unless fresh evidence is discovered. Handel's use of the clarinet is not important, but could a more conclusive explanation be found as to his intentions with regard to these parts, some advance might be made towards the clarification of this rather vague period in the history of wind instruments.

NOTES

[1] *Dublin Mercury* (April 27th to May 11th, 1742).
[2] R. A. Streatfeild, *Handel* (2nd ed. 1910).
[3] V. Schoelcher, *Life of Handel* (1857).
[4] British Museum MS: Eg. 2920, Vol. XI, ff. 1–110 (1724 ?).
[5] C. Burney, *A General History of Music . . .* (1789), Vol. IV, p. 481.
[6] British Museum, MS: RM, 20.c.2, ff. 1–146 (1727).
[7] Diderot & d'Alembert, *Encyclopédie* (1753), Vol. 3.
[8] V. Mahillon, *Cat. Musée Instrumental du Conservatoire de Bruxelles* (1880), Vol. 1, p. 210, etc.
[9] H. C. Koch, *Musikalisches Lexikon* (1802), art. *Schalmey*; cf. art. *Chalumeau* in *La Grande Encyclopédie* (1887–1902).
[10] J. A. Fuller-Maitland and A. H. Mann, *Catalogue of the Music in the Fitzwilliam Museum, Cambridge* (1893).
[11] Bierdimpfl, *Cat. Nationalmuseums, München* (1883), No. 20 (according to information received in 1939).

★

One source of information about the tunings in use for stringed instruments in the early seventeenth century seems to have passed unnoticed so far by scholars. Adriano Banchieri's *Conclusioni nel suono dell'organo* (Bologna, 1609), a rather rambling discourse about the organ, contains at pp. 52–55 instructions on how to tune lutes, viols and violins when they are to be played in consort with the organ or harpsichord. This information from a contemporary of Monteverdi will be a valuable supplement to the laconic details of orchestration given in *Orfeo*, for instance. One or two obvious misprints have been corrected in the following summary, which preserves Banchieri's nomenclature:

Liuto	*F G c f a d′ g′*
Liuto grosso alla quarta	*C D G c e a d′*
Chitarrone	*G, A, B,♭ C D E♭ F G c f a d′ g*
Violone in contrabasso	*D, G, C E A d*
Violone da gamba	*G, C F A d g*
Viola mezana da gamba	*D G c e a d′*
Quarta viola in soprano	*G c f a d′ g′*
Primo violino per il basso	*G d a e′*
Secondo violino	*c g d′ a′*
Ultimo violino	*g d′ a′ e″*

DONALD GILL

The Lute and Musick's Monument

MOST of the knowledge of the lute in this country is derived from three sources, which are repeated *ad nauseam* from text-book to text-book. There is Mattheson's remark that 'when a lutenist is eighty years old, he has certainly spent sixty years of his life in tuning his instrument', another contemporary remark equating the cost of lute keeping with the cost of horse-keeping in Paris, and, finally, *Musick's Monument.**

This famous book, whose entertainment value is so high, and which contains such valuable information as to what was considered a good lute in Stuart times, is most misleading if regarded as a text-book of English lute-playing. It would be far better if it were regarded as a text-book of how not to play the instrument.

As is well known, Mace commences the section on the lute by lamenting that it was going out of fashion in England, and he looks back nostalgically to his youth forty years before. He was no doubt thinking of John Dowland and his contemporaries, and it is therefore of interest to consider the Elizabethan lutenists, who were such a fine and late flower of Renaissance lute-playing and composition. We can readily learn how they played their instruments from such books as Thomas Robinson's *Schoole of Musicke* (1603), the preface to Robert Dowland's *Varietie of Lute Lessons* (1610),[1] and J. Alford's tutor of 1568 and 1574.[2] We find an almost identical technique described in each, the technique that had been used since the latter part of the fifteenth century by lutenists everywhere. The tuning is always the standard six-course tuning in fourths and a major third. The only variation is that the Elizabethans used a single diapason tuned a fourth below the bass, and some of the later works in the *Varietie of Lute Lessons* are entablatured for instruments with two and three diapasons.

These details are comparatively minor, and do not in the least obscure the clear picture that can so easily be built up of sixteenth-century lute-playing. The instrument is neither complex nor difficult to keep in tune, and the music available, from Petrucci's lute-books to the profoundest composition of John Dowland (such as the 'Forlorne

* The writer is indebted to Lt-Col M. W. Prynne, OBE, and to Mr Alec Hodsdon for access to the books referred to.

Hope Fancy'), is all extremely valuable, historically and aesthetically. In fact, there was very little good lute music produced after the early years of the seventeenth century, and *Musick's Monument* introduces us to one of the reasons why.

Mace pays lip service to the old lute masters, but then says that the simple old instrument was very difficult to play, because it was necessary to use high positions to obtain an adequate range. So he introduces us to the French Lute (the instrument so beautifully portrayed in Terborch's *Guitar Lesson* in the National Gallery, London), and explains that the six diapasons, by extending the compass downwards, make it unnecessary to play in high positions on the upper strings. The left-hand technique is further simplified by using the 'Flat French tuning' and the 'New French tuning', which make the fingering of the common chords very easy. The classical right-hand technique is abandoned, and a pinchbeck thumb and forefinger method substituted, including the 'raking play' in which the forefinger is swept across the strings to play chords, producing a downwards arpeggio effect every time as the thumb strikes the bass note. Mace does admit that this was not done in the good old days and confesses that in private he still plays in the old way, a confession that makes one doubt his taste and sincerity. His musical examples are dull and stereotyped in the extreme.

Musick's Monument, then, tells us nothing about the English school of lutenists, except in a negative way. It does introduce us to mid-seventeenth century French lute-playing and, by introducing us to the multiplication of tunings and diapasons, shows us why the lute extinguished itself by becoming over-complex, an instrument for vampers or virtuosi only.

The chapters that deal with the care and periodic reconstruction of the lute are interesting and puzzling. A well cared-for lute nowadays seems to be considerably less labile than in Mace's time. A lute-maker's opinion on this point would be interesting, but one cannot help feeling that in this part of the book Mace was writing to impress rather than to instruct.

One is left with the impression that, as far as the lute is concerned, *Musick's Monument* is the work of an old man who has compromised himself in a pathetic attempt to restore an unfashionable instrument to favour, by lowering his standards to suit the age of Playford, Fiddles and Jiggs and by introducing what he thought was a simpler instrument than the classic lute, but which we can now see contained all the seeds of its own destruction. In comparison with the *Varietie of Lute Lessons* or Robinson's *Schoole of Musicke*, it serves only as a

measure of the decline of lute-music and lute-playing after the death of John Dowland.

NOTES

[1] The preface contains a literal translation of J. B. Besard's *De modo in testudine studendi libellus . . .*, which was appended to his *Thesaurus Harmonicus* (1603).

[2] A translation of Adrien le Roy's lute-tutor published in Paris (1557).

★

MUSICA BRITANNICA

In connection with the Festival of Britain, 1951, the Royal Musical Association with the support of the Arts Council will be publishing the first three volumes of a national collection of English music, entitled *Musica Britannica*. The scheme as a whole will comprise a series of volumes, uniform in size but varying slightly in price, designed to supplement existing editions such as *Tudor Church Music*, the *Purcell Society*, and the *English Madrigal and Lutenist Schools*, in order to provide a comprehensive survey of the development of music in England from the Middle Ages until the early nineteenth century.

Each volume will present a musical text ready for modern performance; at the same time it will give the scholar all the exact information he needs about the original source of the text, editorial emendations, collations with other MSS and printed books, and so on.

The first twenty-five volumes of the series have already been planned. Members of the Galpin Society will no doubt be interested to learn that these will include lute and viol music from the sixteenth and seventeenth centuries, the trio-sonatas of William Boyce, a long series illustrating the development of keyboard music from 1520 to 1800, instrumental and vocal music from the Court of Henry VIII, the piano concertos of John Field, etc., etc.

Each volume will contain about a hundred pages of music with some forty pages of critical commentary, facsimiles and so on; both size and layout have been specially planned to ensure maximum legibility and ease of use.

This is a preliminary announcement; members of the Galpin Society are asked not to write letters to the Editor or Secretary about the scheme at present, since members are among those to whom full details of *Musica Britannica* will be circulated in a few months' time.

FRANK HUBBARD

Two Early English Harpsichords

ONLY two English instruments of the harpsichord type have survived from the so-called virginalist period of English music and, significantly enough, neither of these are virginals. Although it has become a matter of text-book repetition that all jack-action instruments during this period were gathered together under the generic term 'virginals', most authorities have generally assumed that virginals music was invariably performed upon the instrument to which we now apply the term. It is not within the scope of this article to undertake a full-scale discussion of the vexed question of the instruments appertaining to the English virginals school, but it is hoped that a detailed description of the remains of the only two English instruments to have survived from this period may add a small amount of specific knowledge to the vast body of conjecture and ingenious deduction which now forms the corpus of our information on this subject.

1. *Single Manual Claviorganum in the Collection of the Victoria and Albert Museum*

The first of the two instruments to be described was built by Lodovic Theewes, a Fleming of St Martin's Le Grand. It is inscribed: 'LODOWICVS · THEEWES · ME · FESIT · 1579.' Strictly speaking, this instrument is not a harpsichord but a claviorganum or single-manual harpsichord combined with an organ. However, the harpsichord forms a separate part of the structure and it may reasonably be assumed that it presents no radical departure from the practice of contemporary harpsichord makers.

The case of the harpsichord is of oak, covered on the outside with leather, and decorated on the interior by embossed paper and painted devices. It rests upon the large, oblong organ case. There is no connection between the harpsichord and the organ except that a space for trackers has been left beneath the keyboard. The keyboard is now completely missing except for the fragment of one key lever made of pine; the jacks are also absent although one, which may be partly original, was found inside the case. The soundboard, part of one bridge, one nut, wrest-plank with pins, hitchpin rails and pins, jack-guides and slides, as well as the key-bed are extant and appear to be original.

The general outline of the case is clearly Flemish, quite closely resembling the instruments of the Ruckers family in the conformation of the bent side and the angle of the tail. However, the use of oak is not typical of Flemish practice in harpsichord construction even at this early period, and must be regarded as an English feature. In this connection it is interesting to observe that embossed paper, quite similar to that utilized in the decoration of English virginals, lines the inner edge of the case above the soundboard.

RANGE

There are forty-nine balance-rail pins so arranged as to imply a range of four octaves from *C* to *c'''* with no short octave. This range is reaffirmed by the forty-nine organ pipes found in each rank, the forty-nine string courses as shown on the nut, and the forty-nine mortises in the jack-slides.

DISPOSITION

There are three jack-slides and guides, one original bridge and one original nut. It is obvious that there was originally a second bridge and nut since there is a row of hitchpins in the middle of the soundboard as well as on the edge of the soundboard. The single remaining nut bore two courses of strings and is drilled for a third course to pass through to the wrest-pins. There are three rows of wrest-pins placed close together at the keyboard edge of the wrest-plank. It seems, then, that the stringing of the instrument originally consisted of two courses passing over the existing bridge and nut, and a third course of half the length, passing over the usual low bridge in the middle of the soundboard and a low nut placed very near to the registers. These courses were probably tuned $2\times8'$ and $1\times4'$.[1]

The three registers, contrary to usual practice, are fixed at the top and movable at the bottom. The upper slide is cut directly through the pine of the soundboard which has been reinforced by a thin layer of leather. Each of the three lower guides was built up of two longitudinal strips with blocks glued between to space the jacks. These structures have also been veneered with leather. The front and rear lower guides are placed at one level but the middle one is lower. Therefore, it seems reasonable to assume that the front register (i.e. that nearest the player), and the rear register plucked the 8′ courses, while the centre register plucked the 4′ course. In this way the maximum contrast in tone was obtained.

The single jack which remains seems to have been pierced for quill.

It is quite possible, however, that this jack is a later accretion and was not originally a part of the instrument.

There are three hand-stops on the harpsichord as distinct from the organ: two to the left, arranged one above the other, and one to the right. It would require a complete dismantling of the claviorganum to determine which stop operated which slide, but the writer, peering through the clouds of cobwebs which obscure the murky interior of the instrument, was able to make out metal mechanisms at the left end of the slides. The fact that the two left-hand stops must operate the harpsichord registers and not those of the organ is demonstrated by the fact that there is no opening on the underside of the harpsichord case to the left through which levers could pass. An opening does exist on the right underside of the harpsichord case through which the right-hand stop could have communicated with the organ, but in the opinion of the writer, this opening is of a shape, size, and position which makes it unlikely that it served such a purpose. Each of the three stops probably controlled one register of jacks.

CONSTRUCTIONAL FEATURES INFLUENCING TONE

The scaling of this instrument is very similar to that of the Flemish 'six-foot harpsichords'. Only the 8′ course could be measured, and that only down to *c′* since the lower end of the bridge is missing. In each case the shorter string of the pairs was measured. The measurements follow:

c‴	..	..	7″
c″	..	..	13 $\frac{7}{8}$″
c′	..	..	25 $\frac{15}{16}$″

The lowest string was probably about 60″ long.

A sharp departure from Flemish practice is found in the fact that both nuts rest not upon the wrest-plank but upon the soundboard. The writer has seen a seventeenth-century Italian harpsichord constructed in this way which was notable for the clear incisiveness of its tone.

A few wires wound in crumbling masses upon the wrest-pins were measured. *D♯*, brass, had a diameter of ·0155″; *b″* was of ·011″ iron. The latter may have gained in diameter through the accumulated layers of rust. The stringing, however, seems to have been quite like that used two hundred years later in the instruments of Shudi and Kirkman.

The soundboard is somewhat heavier (·14″) than that used in later instruments and must have been resonant to a rather high frequency.

Scaled and constructed much like a Ruckers instrument, this harpsichord probably had a tone similar to that of those famous instruments except for the increase in sharpness due to the arrangement of the nuts, the weight of the soundboard and the use of oak rather than deal in the casework.

2. *Single Manual Harpsichord at Knole, Sevenoaks, Kent*

The second instrument which is to be examined is dated 1622 and is inscribed with a name which has generally been deciphered to read *Johannes Haward*. This harpsichord is among the possessions of the Sackville family at Knole and has almost certainly been there since its construction. It is in much worse condition than the Theewes claviorganum and is consequently more difficult to assess. Scarcely anything remains but the case and stand; keyboard, jacks and soundboard are missing, but happily for our present purpose, the wrest-plank and the leather-covered lower jack-guide still exist.

The handsome quartered oak case, with its delicate mouldings marking off the larger areas into well-proportioned panels, rests upon a carved arcaded stand. In its general proportions, the profile of the harpsichord appears to be in the main stream of English design as revealed by later examples, but the slender tail and rather abrupt curve of the bent side, seen from above, suggest an Italian influence which may also be responsible for the absence of a lid. It is not likely, however, that this harpsichord ever had an external case carrying a lid since the instrument itself fits the stand quite well.

RANGE

The only remaining indications of the harpsichord's original range are the lower jack-guide which is mortised for fifty-three jacks in each register, and the wrest-pins which confirm this figure. The four most likely limits to the compass follow:

C to e'''
$F_,$ to a''
$B_,$ (apparent but really a short octave) to e''' ($C_,\sharp$ omitted)
$E_,$ (apparent but really a short octave) to a'' ($F'\sharp$ omitted)

DISPOSITION

There are three rows of mortises cut for the jacks in the jack-guide, and three rows of wrest-pins, arranged in two groups: a double row toward the soundboard edge of the wrest-plank, and a single row toward the keyboard. Ordinarily, three rows of wrest-pins would

suggest a three-course instrument, 2×8′ and 1×4′, but the arrangement of wrest-pins in this harpsichord introduces difficulties which cannot easily be solved. A harpsichord with two 8′ courses and one 4′ course normally has the double row of 8′ wrest-pins arranged along the edge of the wrest-plank nearest the keyboard. The 4′ wrest-pins are then placed in a single row quite separate from the 8′ pins and much nearer to the soundboard. The 8′ nut is glued to the wrest-plank between the 8′ wrest-pins and the 4′ wrest-pins, and the two courses of 8′ strings pass between the 4′ wrest-pins. The 4′ nut, lower than the 8′ nut, is glued to the wrest-plank between the 4′ wrest-pins and the soundboard. The order of objects on the wrest-plank from keyboard to soundboard would then be as follows: (1) A double row of 8′ wrest-pins; (2) 8′ nut; (3) 4′ wrest-pins; (4) 4′ nut. This arrangement produces the desired shorter speaking length for the 4′ course.

In the Haward harpsichord the normal arrangement of the wrest-pins is reversed and we find the single row of wrest-pins placed toward the keyboard, while the double row is quite near the edge of the wrest-plank adjacent to the soundboard. This means that the speaking length of the double course of strings must have been shorter than that of the single course. No traces of either nut are left, but there must have been a very narrow nut glued to the extreme edge of the soundboard where it meets the wrest-plank. This nut carried the double course of strings. The second nut must have been placed between the two groups of wrest-pins. Thus it seems that the single course of strings was tuned to a lower pitch than the pair of courses. It is very unlikely at this early period that the third course could have been tuned a full octave lower than the pair of courses. We are probably dealing with some sort of transposing device which enabled this harpsichord to be used to accompany instruments tuned to various pitches. The writer attempted to confirm this hypothesis by measuring the diameter of the few scraps of wire remaining on the wrest-pins. If the wire sizes has clearly indicated quite different stringing for each course, further conclusions could have been drawn, but unfortunately the wire sizes seemed quite chaotic and probably represent unskilled replacements of broken strings at a time quite remote from that of the original construction of the instrument.

Above the jack-guide is a gap between wrest-plank and belly-rail which was once occupied by the jack-slides or registers. That these were movable is demonstrated by the existence of dents on the inside of the case, produced by the ends of the jack-slides as they were shifted to and fro. The registers in this instrument, then, seem to have been constructed in the normal manner rather than in the curious arrange-

ments of the Theewes claviorganum in which the lower guide moved. There is no sign of any sort of device with which to move the slides, nor is there a hole in the cheek-piece (as is frequently found) through which cords could have been passed and attached to the ends of the slides.

The dimensions of the instrument make it obvious that it never had more than one keyboard.

CONSTRUCTIONAL FEATURES INFLUENCING TONE

The extremely light construction of this harpsichord and the strongly curved bent side are quite reminiscent of Italian practice and probably indicate that the tone was light and crisp rather than sonorous and powerful. The strong incurve must have shortened the scaling considerably in the treble so that the length of *c″* probably approached the Italian norm of 10″ rather than the Flemish of 13″. The considerable length of the harpsichord (87″ as compared to Theewes's 83″) may indicate that the compass extended below the *C* of the Theewes claviorganum, although probably it was intended merely to increase the brilliance of the bass.

Traces of the framing remain and suggest that four transverse braces ran from the top of the bent side diagonally across the instrument to the bottom of the spine. One brace ran from the keyboard end of the bent side to the bottom of the belly-rail, about one-third of the distance from treble to bass. This framing bears an extremely close resemblance to that pictured in Diderot.[2]

Since the bridges and nuts are missing, it is impossible to deduce the timbre of this instrument conclusively, but it is probable that its tone was lighter than that of the Theewes claviorganum, due to the shorter scaling, though its sustaining power was hardly inferior, since the whole case was light enough to act as an extremely efficient resonator.

CONCLUSION

It is most significant that both of these harpsichords were originally constructed with three courses of strings and three registers. The Dutch authority, Van Blanckenburg,[3] describing Ruckers harpsichords contemporary with these, states that they had only two courses (1×8′, 1×4′) and that the third course was added only after the middle of the seventeenth century.

The four registers of the two-manual Ruckers harpsichords were controlled by two manuals placed a fourth apart. (*F* of the lower

keyboard was under *C* of the upper keyboard, and both keys spoke at the same pitch). Since these manuals could not have been used together easily, it follows that Ruckers instruments originally were capable only of varying the tone colour by adding a 4′ tone to that of the 8′ course. A solo 4′ may have been used occasionally.

It appears, then, that the English makers preceded the Flemish in their use of a third course for tonal effects, and it is even possible that they invented this important improvement in harpsichord design.[4] It seems unlikely that the third course in these English instruments was intended as a transposing device since it passed over the same bridge and nuts as its 'unison', and thus has the same speaking length. It would not have been possible to vary its pitch from that of its 'unison' by much more than a tone without straining the wire past its breaking-point or losing brilliance of timbre.

It is hoped that this examination of two early English harpsichords has demonstrated that 'virginals' players in sixteenth- and seventeenth-century England were not limited to the extremely simple virginals or the scarcely more elaborate single-manual Italian instruments of the period, but that, on the contrary, they had instruments available which were capable of even more dramatic effects than the world-famous Ruckers harpsichords. The resources of the Theewes clavi-organum were those which were standard on one-manual English harpsichords until the eighteenth century. Only the later two-manual harpsichords were more elaborate.

NOTES

[1] Flat brass pins shaped like an inverted L are screwed into the 8′ bridge between each course of strings. These L's can be rotated in such a way that one of the 8′ courses is stopped a short distance in front of the bridge and then speaks at a higher pitch. The length of these L's is graduated from treble to bass, but not sufficiently to cause an even rise in pitch; it is not likely, therefore, that these pins were intended as a transposing device. It is possible that they were so adjusted as to cause the strings to jar without rising in pitch and thus produce a peculiar tone quality which might be effective used in conjunction with the organ. These pins appear to be old, but they may have been added long after the instrument was built. [The mechanism resembles that which Praetorius describes as characteristic of the *Arpichordo*.—ED.]

[2] D. Diderot and J. le R. d'Alembert, *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers* . . . (1751–65), *Planches*, Tom. V, 'Arts méchaniques,' *Lutherie*, Pl. XV, Fig. 2.

[3] Q. van Blanckenburg, *Elementa Musica* (1739).

[4] It must be remembered in this connection that, in his discussion of the clavicymbalum, Praetorius wrote, '. . . wegen der doppelten, dreifachen, ja auch wol vierfachtigen Saiten' (*Syntagma musicum*, 1618–20, Chap. XXXIX).

ANTHONY BAINES

Fifteenth-century Instruments in Tinctoris's *De Inventione et Usu Musicae*

THE contents of this incunable were brought to the notice of musicologists by Dr Karl Weinmann of Regensburg, who, after a short preliminary notice in the *Riemann Festschrift* (1909, p. 267), reproduced the whole of the text in his monograph *Johannes Tinctoris* (1445-1511) *und sein unbekannter Traktat 'De inventione et usu musicae'* (Regensburg, 1917). The treatise is undated, but Weinmann deduces that Tinctoris wrote it in about 1487 and that it was published about the same year, probably in Naples. The Episcopal Library at Regensburg possesses what is apparently the only known copy.

The title suggests that the treatise is partly historical. In fact, however, the entire work is written from the historical aspect, and consequently Tinctoris's choice of modern material is confined to subjects which were then supposed to possess evolutionary links with antiquity. Having first dealt with the human voice, he proceeds to discuss the two instruments which figure most prominently in classical literature and legend, the tibia and the lyra. From here he passes on to their modern (fifteenth-century) descendants, which were presumed to be the shawm and the lute, subjoining to these only the trombone, because it formed part of the shawm band, and the different fiddles, guitars and the cittern because they are also 'derived from the lyre'. The other fifteenth-century instruments lay outside the range of his subject.

Since no other fifteenth-century technical descriptions of these instruments have (so far as the present writer knows) come to light, those which Tinctoris provides, sketchy and sometimes ambiguous though they are, have great value. It has therefore been thought worth while to separate them from the bulk of their extremely uninteresting historical context and to accompany them with a paraphrase in English. The rows of dots show where the descriptions emerge from, or revert to, matters concerning antiquity.

DE INVENTIONE ET USU MUSICAE

Ex Tercio Libro

Quid sit tibia: a quibus inventa: ex quo et qualiter formata.

Tibia instrumentum est duo principalia tenens foramina: unum valde angustum: per quod (canna de se sonora quam vulgus anciam vocat infixa) sonus flatu hominis creatus immittitur: et alterum amplum per quod emittitur.

. . . Si tamen Varroni credendum sit: antique tibie quaterna habebant foramina. Alii dicunt (ut Acro refert) non plus quam tria. Discursu vero temporis eo ventum est: ut tibia que vulgo celimela nuncupatur: nunc septem foraminum sit. Quibus quidem arte recta proportionatis ad omnem cantum proferendum: ipsa tibia effecta est perfectissima. Illa tamen quam dulcinam a dulcedine sua nominant: licet totidem habeat foramina: hoc est septem ante ac unum aliud retro instar fistule: quia cantus omnis editioni non suppetit: imperfecta censetur.

Sciendumque est: ubi foramen septimum cujusvis tibie in unum latus declinaverit: octavumque in alterum fuerit appositum: vocem eandem ab utroque emitti. Hoc enim invenerunt propter minimi digitorum brevitatem: qui (si foramen septimum alia sex ordine recto sequeretur) illud (quando opus esset) claudere non posset. Unde: quom tibicinum alii manum dexteram superponant: et alii supponant: ad usum illorum foramen sinistrum: ad istorum vero dextrum est institutum.

Et quoniam tibia simplex vocem imitatur humanam: unicam scilicet partem cantuum edere potens: ut quemadmodum ex vocibus humanis gravitate et acumine disparibus: cantores diversarum partium cantus pronunciant; ita et tibicines inequalibus

THE INVENTION AND PRACTICE OF MUSIC

From Book III

The tibia, its inventors and its evolution.

The tibia has two main orifices, one extremely narrow, through which the breath is impacted against the sound-producing reed or *ancia*; the other wide, whence the sound is emitted.

. . . If Varro is correct, in ancient times the tibia had four holes, though others, as Acro records, say that it had three. However nowadays the tibia called *celimela*[1] has seven holes. Provided that its holes are correctly placed, any composition can be played on it and it is completely perfect.

On the other hand that tibia called the *dulcina*,[2] on account of the softness of its sound, has seven holes in front and one behind, like a fistula [recorder]. Since not every kind of piece can be played on it, it is considered to be imperfect.

Note that when the seventh hole of any tibia is set to one side and has an eighth hole set opposite to it, each of these holes gives the same note. This arrangement was adopted to accommodate the little finger, which is normally not long enough to close the seventh hole if it is aligned with the other six. In consequence some players prefer to place the right hand uppermost and use the hole on the left side, while others prefer the opposite.

A single tibia is like a voice in being able to deliver only one part in a composition, and hence, just as singers perform different parts according to the varying height and depth of their voices, so do tibia players use instruments varying in size. Some are high, suitable for treble parts, and others are low, for the middle and lowest parts. Therefore tibias, like the parts

tibiis personarent: tibiarum alias acutas: alias graves: illas supremis partibus: istas mediocribus et imis adaptabiles excogitarunt. Unde: tibiarum (ut cantus partium) alii nomen est suprema: alii tenor: quem vulgo bombardam vocant: et alii contratenor. Imos tamen contratenores semper: ac sepe reliquos: tibicinibus adjuncti tubicines: ea tuba quam superius tromponem ab Italis: et sacque-boute a Gallicis appellari diximus: melodiosissime clangunt. Quorum omnium omnia instrumenta simul aggregata: communiter dicuntur alta.

Et quamvis solus tibicen nonnullorum cantuum duas partes: duplici tibia personare possit: quia tamen hec paucis aut pene nullis sufficit cancilenis: imperfecta plurimum est. . . .

themselves, are described as *suprema*, *tenor* (commonly called *bombarde*) and *contratenor*.

However for the lowest contratenor parts, and often for any contratenor part, to the shawm players one adds brass players who play, very harmoniously, upon the kind of tuba which is called, as was said above,[3] *trompone* in Italy and *sacque-boute* in France. When all these instruments are employed together, it is called 'the loud music'.[4]

Though a single player is sometimes able to perform two parts of a composition on *double tibiae*, these suffice for but few, or rather scarcely any, songs, and they are considered the least perfect.

Ex Libro Quarto

Quid sit lyra populariter leutum dicta: quid etiam quelibet instrumentalis species ex ea producta: utpote (juxta linguam vulgarem) viola: rebecum: ghiterra: cetula: et tambura: a quibus omnia hec inventa: quot chordas et qualiter ordinatas primum habuerint: et nunc habeant.

Lyra est instrumentum ex ligno concavo in modum testudinis formatum: circa medium habens orificium: et collum oblongum: super quod chorde ab infima parte ejus juxta orificium emergentes: usque ad summam equaliter tenduntur.

Et hanc sonitor manu sinistra non modo sustinet: verum etiam digitorum ipsius attactu: chordas deprimit ac elevat. Altera vero: aut digitis ejus aut plectro: chordas ipsas percutit. Unde Ovidius in undecimo metamorphoseos de Phoebo lyricine loquens ait:

From Book IV

The lyra commonly called the lute, and the various instruments derived from it, including the *viola*, *rebec*, *ghiterra*, *cetula* and *tambura*; their inventors and past and present methods of stringing and tuning.

The lyra is made of wood in the shape of a tortoise-shell, with a hole roughly in the centre, and a long neck over which the strings are stretched from just below the hole up to the top of the neck.

The player holds the instrument with his left hand, at the same time making the notes by pressure of his fingers, while the strings are struck by the right hand either with the fingers or with a plectrum. Whence Ovid in his Metamorphoses, when he speaks of Apollo the lyre-player, says:

Instructamque lyram gemmis ac dentibus indis
Sustinet a leva: tenuit manus altera plectrum.

His lyre, fashioned of gems and Indian ivory, he supports with his left hand; the other held the plectrum.

Est que plectrum: quo chorde pulse ad sonum emoventur. Cujusmodi apud nos sunt penna et arculus: apud antiquos pecten. . . .

Et in hujusmodi lyra: septem chordas inter se tonis ac semitoniis differentes tetendisse fertur: vel ad imitationem septem orbium planetarum: vel ad honorem septem pleiadum. . . . Sed quom ipse septem chorde: per tonos ac semitonia discrepantes: non omni composito cantui suppetebant: quinque et aliquando sex principalium ordinatio ea subtilitate a posteris (ut reor) Germanis inventa est: ut duabus mediis ad ditonum: ceteris vero ad diatessaron temperatis: lyra sit perfectissima.

Quin ut fortiorem habeat sonum: cuilibet istarum chordarum una conjungitur: que ei (excepta duntaxat prima) ad diapason contemperatur. His autem chordis ex arietum intestinis communiter factis: sunt qui germanica inventione: gravissime quandam aliam ei per diapason consonantem adjiciunt eneam: Qua concentus non modo itidem fortior: verum etiam longe suavior efficitur.

Et quia (sicut prediximus) lyra hec in formam testudinis condita sit: testudo a poetis sepenumero vocatur. . . . Verum: nunc vulgus eam ubique leutum apellat. Et forsan ad differentiam quorumdam aliorum instrumentorum: que ex ipsa lyra: progressu temporis apud diversas regiones inventa sunt. Siquidem hispanorum invento: ex lyra processit instrumentum quod ipsi ac Itali violam Gallici vero dimidum leutum vocant. Que quidem viola in hoc a leuto differt: quod leutum multo majus ac testudineum est: ista vero plana: ac (ut plurimum) ex utroque latere incurvata. Alia tamen viola est: a grecis (ut ajunt) comperta: non solum forma (sicut illa) differens a leuto: sed etiam chordarum dispositione ac pulsatione. Enimvero: sive

The plectrum elicits the notes from the strings; the ancients used the pecten where we use a quill or a bow.

The lyre is described as having seven strings tuned by tones and semitones, analogously to the seven planets, or in honour of the seven Pleiades. But since seven strings differing by tones and semitones do not suffice for every composition, an arrangement of five, sometimes six, principal strings was later adopted, first, I think, by the Germans. According to this, the two middle strings are tuned to a major third and the rest in fourths, thereby making the lyra [lute] completely perfect.

And further, to provide a stronger sound, an additional string may be conjoined to any string and tuned to the octave, though not when conjoined to the first string. The strings are generally of ram's gut, but there is also the German invention in which another [set of][5] brass string[s] is added, tuned very deeply through an octave. By this the sound is rendered not only stronger, but also very much sweeter.

The lyra is often called 'testudo' by the poets, as we have already remarked, by reason of its shape . . . but it is now known everywhere as the lute, perhaps to distinguish it from the various other instruments to which it has given rise in different places from time to time; that, for example, invented by the Spanish, which both they and the Italians call the *viola*, but the French the *demi-luth*. This viola differs from the lute in that the lute is much larger and tortoise-shaped, while the viola is flat, and in most cases curved inwards on each side. But there is *another viola*, said to have been invented by the Greeks, which differs from the lute not only in shape (as did the last-mentioned) but also in stringing and method of playing.

tres ei sint chorde simplices ut in pluribus: per geminam diapentem: sive quinque (ut in aliquibus) sic et per unisonos temperate: inequaliter.

Hoc est tumide sunt extente: ut arculus (quom chorda ejus pilis equinis confecta: sit recta) unam tangens: juxta libitum sonitoris: alias relinquat inconcussas.

Extractum est et lyra: aliud instrumentum valde minus: ab aliis Gallicorum qui id excogitarunt: rebecum: et ab aliis marionetta nuncupatum. Quod instar leuti testudineum: chordas que vel arculo tanguntur (ut predicta viola) tenet adaptatas.

Quinetiam instrumentum illud a Catalanis inventum: quod ab aliis ghiterra: ab aliis ghiterna vocatur: ex lyra prodisse manifestissimum est: hec enim ut leutum (licet eo longe minor sit) et formam testudineam: et chordarum dispositionem atque contactum suscipit.

Ab ipsa etiam lyra instrumentum aliud processit: ab Italis qui hoc compererunt cetula nominatum. Super quam quatuor enee vel calibee chorde: ad tonum et tonum: diatessaron: ac rursus tonum: communiter disposite tenduntur: pennaque tanguntur. Et hec ipsa cetula plana existens: quasdem elevationes ligneas quas populariter tastas appellant: in collo proportionaliter habet ordinatas. Contra quas chorde digitis compresse: sonum: vel sublimiorem vel humiliorem efficiunt.

Illud autem exile ac parvum instrumentum: quod Turcharum exiliori ac minori ingenio: ex lyra itidem tractum: eorum lingua tambura nuncupatur: formam quasi coclearis magni continens: tres chordas habet ad diapason: diapentem: ac diatessaron contemperatas: digitis aut penna ad sonandum impellandas.

Quorum omnium instrumentorum: alia (secundum chordarum quantitatem et numerum) ad quatuor can-

For it has either (1) three simple strings tuned to a pair of fifths, which is the most usual, or (2) five strings tuned unevenly in fifths and unisons.

These are stretched in a protuberant manner so that the bow (which is strung with horse-hair) can touch any one string the player wills, leaving the others untouched.

Also derived from the lyre is a very small instrument called the *rebec* by the French, who invented it, and by others the *marionetta*. This, like the last-mentioned viola, is also strung for bowing, but, like the lute, it is tortoise-shaped.

Furthermore there is the instrument invented by the Catalans, which some call the *guiterra* and others the *ghiterne*. It is obviously derived from the lyre since it is tortoise-shaped (though much smaller) and has the same stringing and method of playing.

Yet another derivative of the lyra is the instrument called *cetula*[6] by the Italians, who invented it. It has four brass or steel strings usually tuned: a tone, a tone, a fourth, and back again a tone,[7] and it is played with a quill. Since the cetula is flat, it is fitted with certain wooden elevations on the neck, arranged proportionately, and known as frets. The strings are pressed against these by the fingers to make a higher or a lower note.

The miserable and puny instrument which the Turks with their even more miserable and puny ingenuity, have evolved from the lyra and call the *tambura*, has the shape of a large spoon and has three strings tuned to octave, fifth and fourth; it is played either with the fingers or with a quill.

Of all the foregoing instruments, some by reason of the size and number of their strings are perfectly suitable for all four parts of a composition, or even for a greater number if the player has sufficient skill. Others are

Est que plectrum: quo chorde pulse ad sonum emoventur. Cujusmodi apud nos sunt penna et arculus: apud antiquos pecten. . . .

Et in hujusmodi lyra: septem chordas inter se tonis ac semitoniis differentes tetendisse fertur: vel ad imitationem septem orbium planetarum: vel ad honorem septem pleiadum. . . . Sed quom ipse septem chorde: per tonos ac semitonia discrepantes: non omni composito cantui suppetebant: quinque et aliquando sex principalium ordinatio ea subtilitate a posteris (ut reor) Germanis inventa est: ut duabus mediis ad ditonum: ceteris vero ad diatessaron temperatis: lyra sit perfectissima.

Quin ut fortiorem habeat sonum: cuilibet istarum chordarum una conjungitur: que ei (excepta duntaxat prima) ad diapason contemperatur. His autem chordis ex arietum intestinis communiter factis: sunt qui germanica inventione: gravissime quandam aliam ei per diapason consonantem adjiciunt eam: Qua concentus non modo itidem fortior: verum etiam longe suavior efficitur.

Et quia (sicut prediximus) lyra hec in formam testudinis condita sit: testudo a poetis sepenumero vocatur. . . . Verum: nunc vulgus eam ubique leutum apellat. Et forsan ad differentiam quorumdam aliorum instrumentorum: que ex ipsa lyra: progressu temporis apud diversas regiones inventa sunt. Siquidem hispanorum invento: ex lyra processit instrumentum quod ipsi ac Itali violam Gallici vero dimidum leutum vocant. Que quidem viola in hoc a leuto differt: quod leutum multo majus ac testudineum est: ista vero plana: ac (ut plurimum) ex utroque latere incurvata. Alia tamen viola est: a grecis (ut ajunt) comperta: non solum forma (sicut illa) differens a leuto: sed etiam chordarum dispositione ac pulsatione. Enimvero: sive

The plectrum elicits the notes from the strings; the ancients used the pecten where we use a quill or a bow.

The lyre is described as having seven strings tuned by tones and semitones, analogously to the seven planets, or in honour of the seven Pleiades. But since seven strings differing by tones and semitones do not suffice for every composition, an arrangement of five, sometimes six, principal strings was later adopted, first, I think, by the Germans. According to this, the two middle strings are tuned to a major third and the rest in fourths, thereby making the lyra [lute] completely perfect.

And further, to provide a stronger sound, an additional string may be conjoined to any string and tuned to the octave, though not when conjoined to the first string. The strings are generally of ram's gut, but there is also the German invention in which another [set of][5] brass string[s] is added, tuned very deeply through an octave. By this the sound is rendered not only stronger, but also very much sweeter.

The lyra is often called 'testudo' by the poets, as we have already remarked, by reason of its shape . . . but it is now known everywhere as the lute, perhaps to distinguish it from the various other instruments to which it has given rise in different places from time to time; that, for example, invented by the Spanish, which both they and the Italians call the *viola*, but the French the *demi-luth*. This viola differs from the lute in that the lute is much larger and tortoise-shaped, while the viola is flat, and in most cases curved inwards on each side. But there is *another viola*, said to have been invented by the Greeks, which differs from the lute not only in shape (as did the last-mentioned) but also in stringing and method of playing.

tres ei sint chorde simplices ut in pluribus: per geminam diapentem: sive quinque (ut in aliquibus) sic et per unisonos temperate: inequaliter.

Hoc est tumide sunt extente: ut arculus (quom chorda ejus pilis equinis confecta: sit recta) unam tangens: juxta libitum sonitoris: alias relinquat inconcussas.

Extractum est et lyra: aliud instrumentum valde minus: ab aliis Gallicorum qui id excogitarunt: rebecum: et ab aliis marionetta nuncupatum. Quod instar leuti testudineum: chordas que vel arculo tanguntur (ut predicta viola) tenet adaptatas.

Quinetiam instrumentum illud a Catalanis inventum: quod ab aliis ghiterra: ab aliis ghiterna vocatur: ex lyra prodisse manifestissimum est: hec enim ut leutum (licet eo longe minor sit) et formam testudineam: et chordarum dispositionem atque contactum suscipit.

Ab ipsa etiam lyra instrumentum aliud processit: ab Italis qui hoc compererunt cetula nominatum. Super quam quatuor enee vel calibee chorde: ad tonum et tonum: diatessaron: ac rursus tonum: communiter disposite tenduntur: pennaque tanguntur. Et hec ipsa cetula plana existens: quasdem elevationes ligneas quas populariter tastas appellant: in collo proportionaliter habet ordinatas. Contra quas chorde digitis compresse: sonum: vel sublimiorem vel humiliorem efficiunt.

Illud autem exile ac parvum instrumentum: quod Turcharum exiliori ac minori ingenio: ex lyra itidem tractum: eorum lingua tambura nuncupatur: formam quasi coclearis magni continens: tres chordas habet ad diapason: diapentem: ac diatessaron contemperatas: digitis aut penna ad sonandum impellandas.

Quorum omnium instrumentorum: alia (secundum chordarum quantitatem et numerum) ad quatuor can-

For it has either (1) three simple strings tuned to a pair of fifths, which is the most usual, or (2) five strings tuned unevenly in fifths and unisons.

These are stretched in a protuberant manner so that the bow (which is strung with horse-hair) can touch any one string the player wills, leaving the others untouched.

Also derived from the lyre is a very small instrument called the *rebec* by the French, who invented it, and by others the *marionetta*. This, like the last-mentioned viola, is also strung for bowing, but, like the lute, it is tortoise-shaped.

Furthermore there is the instrument invented by the Catalans, which some call the *guiterra* and others the *ghiterne*. It is obviously derived from the lyre since it is tortoise-shaped (though much smaller) and has the same stringing and method of playing.

Yet another derivative of the lyra is the instrument called *cetula*[6] by the Italians, who invented it. It has four brass or steel strings usually tuned: a tone, a tone, a fourth, and back again a tone,[7] and it is played with a quill. Since the cetula is flat, it is fitted with certain wooden elevations on the neck, arranged proportionately, and known as frets. The strings are pressed against these by the fingers to make a higher or a lower note.

The miserable and puny instrument which the Turks with their even more miserable and puny ingenuity, have evolved from the lyra and call the *tambura*, has the shape of a large spoon and has three strings tuned to octave, fifth and fourth; it is played either with the fingers or with a quill.

Of all the foregoing instruments, some by reason of the size and number of their strings are perfectly suitable for all four parts of a composition, or even for a greater number if the player has sufficient skill. Others are

tuum partes: immo ad plures (ubi sonitoris ingenium et ars corresponderent) perfectissima promendas: alia ad tres: alia ad duas: alia saltem ad unam: accommodabilissima sunt. . . .

Usus autem ipsius lyrae quam leutum vulgo nuncupari prediximus: festis: choreis: et conviviis: privatisque recreationibus apud nos inservit. In qua plurimi precipue germani sunt eruditi. Siquidem: nonnulli associati: supremam partem cujusvis compositi cantus: cum admirandis modulorum superinventionibus: adeo eleganter eo personant: ut profecto nihil prestantius. Inter quos: Petrus bonus Herculis Ferrarie ducis incliti lyricen (mea quidem sententia) ceteris est preferendus.

Alii (quod multo difficilius est) soli: cantus non modo duarum partium: verum etiam trium et quatuor: artificiosissime promunt. Ut Orbus ille germanus: ac Henricus Carolo Burgundionum duci fortissimo nuper serviens. Quem etiam germanum: hec sonandi peritia: celebrem pre omnibus efficit.

Et quamvis aliqui ad hoc instrumentum id est leutum: quaslibet cantilenas (ut supra tetigimus) jocundissime concinant: ad violam tamen sine arculo in Italia et hispania frequentius. Viola vero cum arculo: non solum ad hanc usum: sed etiam ad historiarum recitationem in plerisque partibus orbis assumitur.

Neque preterire in animum venit: quot exiguo tempore lapso: duos fratres Orbos natione Flamingos: viros quidem non minus litteris eruditos quam in cantibus expertos: quorum uni Carolus: alteri Johannes nomina sunt. Brugis audiverim: illum supremam partem et hunc tenorem plurium cantilenarum: tam perite: tamque venuste hujusmodi viola consonantes: ut in illa nunquam melodia: me profecto magis oblectaverim.

suitable for three, two, or only one [of the parts].

The lyre which is called the lute, we use at feasts, dances, and public and private entertainments, and in this many Germans are exceedingly accomplished and renowned. Thus some teams will take the treble part of any piece you care to give them and improvise marvellously upon it with such taste that the performance cannot be rivalled. Among such, Pietro Bono [Avogari], lutenist to Ercole, Duke of Ferrara, is in my opinion pre-eminent.

Furthermore, others will do what is much more difficult; namely to play a composition alone, and most skilfully, in not only two parts, but even in three or four. For example, Orbus, the German, or Henri who was recently in the service of Charles, Duke of Burgundy; the German was supereminent in playing in this way.

While some play every sort of composition most delightfully on the lute, in Italy and Spain the viola without a bow is more often used. On the other hand over the greater part of the world the viola with a bow is used not only in this way, but also in the recitation of epics.

Nor must I pass over a recent event, the performance of two Flemings, the brothers Charles and Jean Orbus, who are no less learned in letters than skilled in music. At Bruges, I heard Charles take the treble and Jean the tenor in many songs, playing this kind of viola so expertly and with such charm that the viola has never pleased me so well.

And I am similarly pleased by the rebec, my predilection for which I will not conceal, provided that it is played by a skilful artist, since its strains are very much like those of the viola. Accordingly, the viola and the rebec are my two instruments; I repeat, my chosen instruments, those

Et quia rebecum (si sonitor artifex et expertus fuerit) modulos illis quam simillimos emittat: quibuslibet affectus spiritus mei (occulta quadam familiaritate) ad leticiam quam simillime excitantur. Hec itaque duo instrumenta mea sunt: mea inquam: hoc est quibus inter cetera: animus meus ad affectum pietatis assurgit: quaeque ad contemplationem gaudiorum supernorum: ardentissime cor meum inflammant. Quo mallem ea potius ad res sacras: et secreta animi solamina semper reservari: quam ad res prophanas et publica festa interdum applicari.

Ghiterre autem usus: propter tenuem ejus sonum: rarissimus est. Ad eamque multo sepius Catalanas mulieres carmina quaedam amatoria audivi concinere: quam viros quicpiam ea personare. Cetula tantum uti quosdam rusticos ad eam nonnullas leves cantilenas concinentes choreas quoque ducentes in Italia comperi.

Et quom Turcharum immanissima gens: qui pontificatus Sixti papae quarti anno decimo: Hydrontum Apulie Metropolim dolo expugnaverant: post quatuor mensium obsidionem: Alfonso Calabrorum duci strenuissimo: se internitionis metu dedidissent: quosdam eorum illo instrumento: quod (ut supra diximus) ab eis tambura vocatur: nonnullos cantus (ut privatim (quod possent) se in terra consolarentur aliena) Neapoli edere persensi: adeo nimirum incomptos ac insulsos: quod solum id ad eorum ostendendam barbariem: omnino sufficiebat.

that induce piety and stir my heart most ardently to the contemplation of heavenly joys. For these reasons I would rather reserve them solely for sacred music and the secret consolations of the soul, than have them sometimes used for profane occasions and public festivities.

The ghiterra is used most rarely, because of the thinness of its sound. When I heard it in Catalonia, it was being used much more often by women, to accompany love-songs, than by men. The cetula is only used in Italy by rustics to accompany light songs and to lead dance music.

Finally, when the Turks, that most barbarous race, took Otranto, the capital of Apulia, by a trick (in the tenth year of the pontificate of Pope Pius IV [1480], after a four months' siege), and subsequently surrendered themselves to that warrior Alfonso King of Naples in fear of their lives, I happened to be in Naples and myself heard various tunes played on the tambura, which I have already described; tunes which they played in private, being allowed to do so to console their captivity. The extravagance and rusticity of these pieces were such as only to emphasize the barbarity of those who played them.

NOTES

[1] *Celimela*: chalemelle (Engl. shalmele), shawm.

[2] *Dulcina*: douçaine, an instrument very frequently mentioned in literature from the fourteenth century until the middle of the sixteenth, but whose form has not yet been identified.

[3] 'superius . . . diximus'—not in *De Inventione*.

[4] 'alta': *les haulx menestrels* of fifteenth-century courts.

[5] 'quandam aliam . . . eneam'='another string, of brass'. Alternatively as suggested in the paraphrase, the word *ordinatio* (from the preceding paragraph) being understood.

[6] *Cetula*: citole, cittern.

[7] Suggesting a tuning *e' d' a b* (cf. R. T. Dart, *Galpin Society Journal*, I, p. 48).

★

Illustrations of the instruments referred to in Frank Hubbard's article on *Two Early English Harpsichords* will be found in Philip James's *Early Keyboard Instruments* (London, 1930), facing pages 116 and 120. A photograph of the Haward harpsichord also appears in the issue of *Apollo* for March, 1949.

★

ROBERT GOBLE

'GREATSTONES', HEADINGTON, OXFORD

Maker of

Harpsichords, Clavichords

Virginals, Recorders

★

Prices and particulars sent on request

ROBERT DONINGTON

James Talbot's Manuscript

(CHRIST CHURCH LIBRARY MUSIC MS 1187)

II. BOWED STRINGS

THERE is less information on the bowed string instruments, but it is presented in much the same fashion as the information on wind instruments discussed in the first number of this JOURNAL by Anthony Baines,* and a similar arrangement is adopted here, the letters of reference being:

Dimensions of instruments, given in feet (f.), inches (′), and eighth parts of an inch (″)	X
Tablature and Tunings	Y
General observations mixed up with extracts from Praetorius, Mersenne, Kircher and others	Z

The wind instruments had against them, in X or Y, the names of one or more London musicians, presumably those from whom particulars could be procured or examples borrowed. These are not shown against many of the stringed instruments, but a separate sheet gives a list of nearly all the instruments with musicians' names against each one; of this, the following is a summary as far as the instruments covered by the present instalment are concerned:

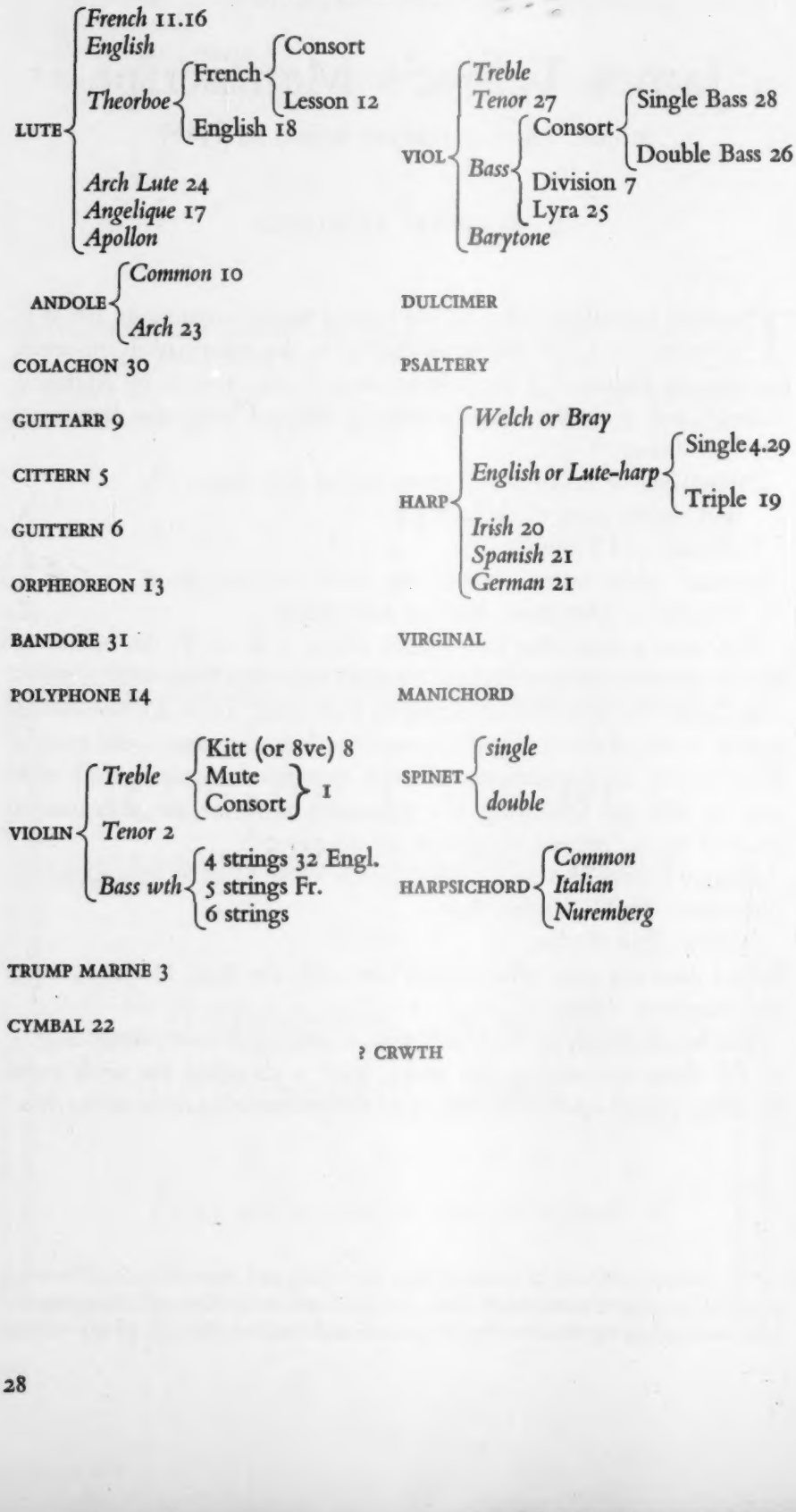
Finger: Trump Marine, Treble & Tenor Viols, Double Bass, Cymbal.
Banister: Treble Violin, Kitt.
Paisible: Bass Violin.

Talbot does not state who helped him with the Bass, Division, Lyra and Barytone Viols.

The leaves in group X which concern stringed instruments begin, as did those concerning the wind, with a classified list with page numbers placed against the names of the instruments dealt with, thus:

* To whose assistance in summarizing, arranging and correcting the following material I am greatly indebted. I am also indebted to Mr Kenneth Skeaping for helpful suggestions concerning the seventeenth-century fittings of the violin.

STRINGED INSTRUMENTS



XI. THE VIOLIN TREBLE

	ft.	in.	lignes
From the end of the Scrowl to the Nutt	0	4	0
?From the Nutt to the lower end of the Finger-board	0	8	0
From the lower end of the Finger-board to the Bridge	0	5	0
From the Bridge to the Tail-piece	0	2	0
Length of the Tail-piece	0	4	4
From the lower end of the Tail-piece to the bottom of the Belly [not shown]			
[inserted later] Length of the Instrument	1	11	4
?The length of the Neck from the Nutt to the Belly	0	5	2
The breadth of the upper end of the Finger-board next the Nutt	0	1	0
The breadth of the lower end of the Finger-board	0	1	4
The heighth of the Bridge between the Belly and the strings	0	1	0
The breadth of the Bridge { at the top	0	1	6
The breadth of the Bridge { at the bottom	0	1	4
Length of Belly	1	2	0
The length of the Sound-holes	0	3	0
The breadth of the upper part of the Belly	0	6	6
The breadth of the middle	0	4	4
The breadth of the lower part of the Belly	0	8	3
The depth of the Violin under the Bridge	0	3	4
The depth of the Rimms	0	1	4
The usual length of the Consort Bow	2	0	0
The length of the Bow for Solo's or Sonata's	2	2	0
	2	2	4
	2	3	0

Y. [On a stave, 'tuning of the violins' with 'treble' (normal violin); 'tenor' (normal viola); and 'bass' (*B*,♭, *F*, *c*, *g*). Above this stave is a blank one headed 'Viol di Corunna, Mr Finger'.]

[A separate sheet contains, written in another hand:]

A Scale for the Violin

[A complete chromatic scale from *g* to *c'''*, with the fingering marked above the notes. This runs, for each string, 0 1 1 1 2 2 3 3 (the last figure being above *c'*♯, *g'*♯, *d''*♯ on the 3 lower strings), except for the three highest semitones (marked *l*, standing for little finger) and for *a'*♭ (marked *l* 3d) and *e''*♭ (*l* 2d).] When you would go above ccc you must stop your hand, putting your 1st finger upon aa, by this you gain 3 Notes from d [*sic*] to fff.

Z. Violin Treble.

Belly of Cullin Cliff [Cologne cleft]. Back, Neck & Ribs of Air. Pegs of dryd Box Ebony or any hardest wood: Finger-board finest Russian Ebony very hard wood & brings forth clearer sound of Instrt by hard stopping: commonly of Air wood.

Barr glewd on the bass side of the same wood within the belly. Sound-post under treble string of the same between back & belly under the bridge or there about accordg to discretion of Artist. thickness goosequill.

Tail-piece same wth Finger-board.
Sounding holes. Button same wth Pegs as the Nutt is. Bridge same wth back.
Place Bridge even wth Notch or *f* of the Sounding holes.
Bow of fine Speckled-wood has two mortises to wch the hair fastened and one at the head the other towds the bottom or back part of Nutt. Hair of the best & finest white hair if possible from Stoned horse: hair should be full.
Bow of violin not under 24′ from there to 27½ at most. 27, 26–25½ Solo-Bow.
Fretted for Beginners.
?Violin for the Mean pt.
Best Strings are Roman 1st & 2d of Venice Catlins: 3d & 4th best be finest & smoothest Lyons all 4 differ in size. Ag[utter].

VIOLA

X2. TENOR VIOLIN [Page otherwise blank]
Y. [See above, under Violin.]
Z. Violin Tenor & Counter Tenor. [Nothing more.]

VIOLONCELLO

X32. BASS VIOLIN

	ft.	in.	lignes
From the top of the Scrowl to the Nutt	0	8	4
From the Nutt to the end of the Finger-board	1	1	0
From thence to the Bridge	0	11	4
From the Bridge to the Tail-piece	0	4	0
The length of the Tail-piece	0	10	0
[Inserted later] Length of Instrument	3	8	0
The length of the Neck from Nutt to Belly	0	10	0
The breadth of the Finger-board at the upper end	0	1	6
at the lower end	0	2	6
The heighth of the Bridge	0	3	6
The breadth of the Bridge at the top	0	3	0
at the bottom	0	3	6
The length of the Sound-holes	0	3	4 [*sic*]
The breadth of the Belly at the upper part	1	2	0
middle	[not shown]		
lower part	1	5	4
[Inserted later] Length of Belly	2	4	0
The depth of the Instrument under the Bridge	0	7	0
The depth of the Rimms	0	4	6
The breadth of the Tail-piece at top equal to that of the Finger-board			
The length of the Bow	2	2	0

Y. [Tuned a tone below the modern tuning; see above under violin.]
Z. Lewis has a Bass Violin (made for Lord Abergenny) which has 6 strings: its neck is somewhat shorter than that of usual B.Violin to bear a Pitch: he says the treble string is of the same sound and size with the 3d of B.Violin (or B.Viol) it is louder than either. And tuned B.Viol way. [Note: strings are numbered from highest to lowest throughout the MS.]
Bass Violin all Venice Catlins.

TREBLE VIOL

X. No particulars.
Y. Treble Viol. [Tuning, given on stave: *d g c′ e′ a′ d″*.]
Z. [Paraphrases Mace, *Musick's Monument*, p. 246, on proportionate lengths of Treble, Bass and Tenor Viols.]

TENOR VIOL

X27. TENOR VIOL

	ft.	in.	lignes
From top of Scrowl to Nutt	0	8	2
From thence to end of Finger-board	1	4	0
Thence to Bridge	0	8	0
From Bridge to Tail-piece	0	2	0
Length of Tail-piece	0	9	0
Length of Neck	0	11	0
Breadth of Finger-board above	0	1	6
below	0	2	6
Heighth of Bridge	0	2	4
Breadth at top	0	3	2
at bottom	0	3	4
Length of Sound-holes	0	4	0
Length of Belly	1	11	0
Breadth upper	0	11	0
Breadth middle betwixt middle bouts	0	8	0
Breadth lower part	1	1	0
under bridge	0	5	2
Depth at sides	0	4	6
next Finger-board	0	2	6
Tail-piece rests on square piece of wood called term			
Bow	2	4	0

Y. Tenor Viol. [Tuning, shown on stave, *A d g b e′ a′*.]
Z. [See Treble Viol.]

BASS VIOL

X28. BASS VIOL. CONSORT

	ft.	in.	lignes
From top of Scrowl to Nutt	0	9	0
Thence to bottom of Finger-board	1	9	4
Thence to Bridge	0	10	4
Thence to Tail-piece	0	4	0
Length of Tail-piece	1	0	3
deduct from Whole length 1′ 6 for excess of tail-piece			
Length of Neck	1	2	4
Length of Belly	2	6	0
Breadth at top	0	3	0
at broadest part above	1	2	6
at middle	0	11	1
at broadest part below	1	5	4

Tail-piece same wth Finger-board.
Sounding holes. Button same wth Pegs as the Nutt is. Bridge same wth back. Place Bridge even wth Notch or *f* of the Sounding holes.
Bow of fine Speckled-wood has two mortises to wch the hair fastened and one at the head the other towds the bottom or back part of Nutt. Hair of the best & finest white hair if possible from Stoned horse: hair should be full. Bow of violin not under 24′ from there to 27½ at most. 27, 26–25½ Solo-Bow.
Fretted for Beginners.
?Violin for the Mean pt.
Best Strings are Roman 1st & 2d of Venice Catlins: 3d & 4th best be finest & smoothest Lyons all 4 differ in size. Ag[utter].

VIOLA

X2. TENOR VIOLIN [Page otherwise blank]
Y. [See above, under Violin.]
Z. Violin Tenor & Counter Tenor. [Nothing more.]

VIOLONCELLO

X32. BASS VIOLIN

	ft.	in.	lignes
From the top of the Scrowl to the Nutt	0	8	4
From the Nutt to the end of the Finger-board	1	1	0
From thence to the Bridge	0	11	4
From the Bridge to the Tail-piece	0	4	0
The length of the Tail-piece	0	10	0
[Inserted later] Length of Instrument	3	8	0
The length of the Neck from Nutt to Belly	0	10	0
The breadth of the Finger-board at the upper end	0	1	6
at the lower end	0	2	6
The heighth of the Bridge	0	3	6
The breadth of the Bridge at the top	0	3	0
at the bottom	0	3	6
The length of the Sound-holes	0	3	4 [*sic*]
The breadth of the Belly at the upper part	1	2	0
middle	[not shown]		
lower part	1	5	4
[Inserted later] Length of Belly	2	4	0
The depth of the Instrument under the Bridge	0	7	0
The depth of the Rimms	0	4	6
The breadth of the Tail-piece at top equal to that of the Finger-board			
The length of the Bow	2	2	0

Y. [Tuned a tone below the modern tuning; see above under violin.]
Z. Lewis has a Bass Violin (made for Lord Abergenny) which has 6 strings: its neck is somewhat shorter than that of usual B.Violin to bear a Pitch: he says the treble string is of the same sound and size with the 3d of B.Violin (or B.Viol) it is louder than either. And tuned B.Viol way. [Note: strings are numbered from highest to lowest throughout the MS.]
Bass Violin all Venice Catlins.

TREBLE VIOL

X. No particulars.
Y. Treble Viol. [Tuning, given on stave: *d g c′ e′ a′ d″*.]
Z. [Paraphrases Mace, *Musick's Monument*, p. 246, on proportionate lengths of Treble, Bass and Tenor Viols.]

TENOR VIOL

X27. TENOR VIOL

	ft.	in.	lignes
From top of Scrowl to Nutt	0	8	2
From thence to end of Finger-board	1	4	0
Thence to Bridge	0	8	0
From Bridge to Tail-piece	0	2	0
Length of Tail-piece	0	9	0
Length of Neck	0	11	0
Breadth of Finger-board above	0	1	6
below	0	2	6
Heighth of Bridge	0	2	4
Breadth at top	0	3	2
at bottom	0	3	4
Length of Sound-holes	0	4	0
Length of Belly	1	11	0
Breadth upper	0	11	0
Breadth middle betwixt middle bouts	0	8	0
Breadth lower part	1	1	0
under bridge	0	5	2
Depth at sides	0	4	6
next Finger-board	0	2	6
Tail-piece rests on square piece of wood called term			
Bow	2	4	0

Y. Tenor Viol. [Tuning, shown on stave, *A d g b e′ a′*.]
Z. [See Treble Viol.]

BASS VIOL

X28. BASS VIOL. CONSORT

	ft.	in.	lignes
From top of Scrowl to Nutt	0	9	0
Thence to bottom of Finger-board	1	9	4
Thence to Bridge	0	10	4
Thence to Tail-piece	0	4	0
Length of Tail-piece	1	0	3
deduct from Whole length 1′ 6 for excess of tail-piece			
Length of Neck	1	2	4
Length of Belly	2	6	0
Breadth at top	0	3	0
at broadest part above	1	2	6
at middle	0	11	1
at broadest part below	1	5	4

	ft.	in.	lignes
Length of Sound-holes	0	5	2
Distance	0	7	2
Breadth of Bridge at foot	0	4	4
top	0	4	0
Heigth of Bridge	0	3	4
Breadth of Finger-board at top next Nutt	0	2	1
bottom	0	3	4
Tail-piece above	0	3	4
below	0	1	6
Depth of Rimm next neck	0	4	0
under Bridge	0	6	6
at middle and bottom	0	5	4
Bow	2	7	0

Y. [See fig. 1.]

Z. Bass Viols of all sizes least large the Bass Violin.

[Bowing instructions pirated from Mace, p. 248, in slightly garbled form.]

X7. DIVISION VIOL

	ft.	in.	lignes
From the top of the Scrowl to the Nutt	0	8	4
From the Nutt to the end of the Finger-board	1	6	4
?From thence to the Bridge	0	8	4
The thickness of the Bridge [inserted later]	[figures not shown]		
?From the Bridge to the Tail-piece	0	3	2
Length of the Tail-piece	0	11	0
The length of the Instrument	[not shown]		
The length of the Neck behind [corrected from: *from the Nutt to the Belly*]	1	3	4
The breadth of the Finger-board at the upper end	0	2	2
at the lower end	0	3	4
The heigth of the Bridge	0	3	2
The breadth of the Bridge at the top	0	3	5
at the bottom	0	3	4
The length of the Sound-holes (their distance 6′.2″)	0	5	0
The breadth of the Belly at the upper part	1	2	0
The breadth of the Belly at the middle part	0	10	0
The breadth of the Belly at the lower part	1	4	0
Length of Belly [inserted later]	2	3	2
The Depth of the Instrument under the Bridge	0	7	0 [?6]
The Depth of the Rimms	0	5	0
next Belly	0	3	3
The length of the Bow	2	6	0

NB. that the Consort Viol is longer than the Division Viol 1′ in the Neck and Body: it is broader at the top of the Belly [figure illegibly corrected; ⅝′?] & in the sides ½′: at the bottom 1′: its Bow 3′ or 2½′.

Y. [The stave for its tuning is left blank.]

Z. The Division Viol has 7 Fretts placed at the discretion of the Master. Ag.

Fig. 1. Tunings for the lower Viols (Y)

LYRA VIOL

X25. LYRA VIOL

Lyra Viol bears the proportion to the Division Viol, viz. it is shorter in the Body and Neck 1′: in the sides ½′: it is narrower at the top of the Belly ½′: at the bottom 1′: its Bow 30′.

	ft.	in.	lignes
From Scrowl to Nutt	0	7	4
Thence to end of Finger-board	1	5	0
Thence to Bridge	0	11	1
To Tail-piece	0	3	1
Length of Tail-piece	0	11	0
From Term to Tail-piece from whole Length deduct	0	1	6
Whole Length	[not shown]		
Length of Belly	2	4	0
Neck	0	11	2
Breadth of Belly at Neck	0	2	4
broadest part above	1	0	6
middle	0	9	4
broadest part below	1	3	4

Length of Sound-holes 4′.2″. Distance 6′.4″.
Breadth of Bridge at Foot 3′.2″: at top 3′.4″: Height 3′.
Breadth of Finger-board at top 2′: at bottom 3′.
Tail-piece at top 3′: at bottom 1′.4″.
Depth of Sides next Neck 3′.4″: at middle 5′.2″: under Bridge 6′+.
Length of Bow 30′.

Y. [See fig. 1.]

BARYTONE VIOL

Z. Viol Barytone. [Page blank except at bottom; here the *Lyra tuning* (see fig. 1) is given again, and accompanied with:]

This is the same with Lyra Viol only 2 Notes lower. Ordinary Tuning as Bass Viol only 3 Notes higher. Wire Basses for the Thumb [followed by a stave on which is written a complete diatonic scale from *G′* to *d*, subsequently filled in (in the same hand) as a chromatic scale].

DOUBLE BASS

X26. DOUBLE BASS VIOL

Has the following Proportions to the division Viol. Longer in Body 1 Foot: in Neck 6′: Wider in upper part of Belly 6′ in lower 10′: Deeper at rimms 3′, under Bridge 4′. Lengths of Bow 36′ [but *cf.* below]. All Viols but this carry 7 Frets.

	ft.	in.	lignes
From top of Head to Nutt	0	11	0
From Nutt to Bridge (without)	3	4	1
Thence to Breech	1	10	5
	6	1	6

Length of Finger-board 1*f*.11′.7″. breadth at top 2′.3½″, at bottom 3′ 7″. distance from belly 1′.4″.
Length of Neck 1*f*.3′.
Height of Bridge middle 4′.6½″, breadth at top 4′.6½″, at bottom 4′.4″+.
Length of Sound holes 8′.3″. breadth at middle 7″.

Length of Tail-piece 1*f*.5′.4″. breadth at top −4′. at bottom 2′.4″.
Length of Belly 3*f*.11′.1″.
Breadth of Belly at upper pt 1*f*.7′.6″. middle 1*f*.1′.2″. lower part 2*f*.4″.
Depth of Rimms 7′.5″. at the Neck 3′.5½″.
The thickness of Belly 1″+. of Back 1½″.
Length of Bow 2′ [*sic*]. 7′.4″.
Fretts 5.

Y. [See fig. 1.]

Z. VIOL. Double Bass.
Generally 5 Strings sometimes 6 after the discretion of the Artist.

KIT

X8. KITT	ft.	in.	lignes
From top of Scrowl to Nutt	0	2	2
To the end of Finger-board from Nutt	0	4	3½
From thence to end of Instrument	0	7	1
	1	1	6½
Breadth of Finger-board above	0	0	6½
below and of belly under Finger-board	0	1	1
of Belly below	0	1	3½
Back made hollow in compass, above	0	2	0
below	0	2	2
Length of Sound-holes	0	1	5½
of Tail-piece	0	1	5½

Breadth of Tail-piece at top 5″, bottom 3½″.
Height of Bridge, middle 7″, at sides 5″.
Breadth of Bridge at top 1′.2″, at bottom 1′.
?Length of Bow.

TROMBA MARINA

X3. TRUMP MARINE	ft.	in.	lignes
From the top of the Head to the Nutt	0	3	5
Thence to the jarring Bridge	0	5	10
[?should read	5	10	0]
Thence to the lower Bridge	0	3	7
Thence to the Breech	0	1	7
Length of Neck from Nutt to Belly	1	10	6
Length of Belly	4	4	0
From top of Belly to 1st Knot (whose Diameter 3′)	1	3	0
Thence to 2d Knot (whose Diameter 3′.6″)	1	6	0
Thence to the lower fixed Bridge	0	10	4
Breadth of Belly above	0	5	2½
below	1	3	0
Depth above	0	7	0
below	0	3	4

Length of movable Bridge at Feet 2′.½″.

Height of the larger Foot 1′.1½″: towards round Foot 6″.
Length and thickness of large square Foot under the Notch 3½.
Diameter of little round Foot —3″: Distance of Notch from higher end ½″.
[Rough sketch shows this bridge, with notch to receive the string situated above the large foot.]
Distance between the two bridges 3′.6″.
Length of fixed Bridge below 3′.7″: above at the Points 5′: heighth 7″: thickness inside 1′.1″:
Within the Belly about 5″ under it run all along from top to bottom 21 Strings of Brass Wire wch have their Nutt 3′.5″ below the head of the Belly & may be tun'd by as many Iron Pins between their Nutt and the top of the Belly.
Back of Air, Belly of Cullin Cliff, raised foot of Bridge tip'd wth Ivory.
Z. [Its notes, shown on a stave: *G d′ g′ b′ d″ g″ a″ b″ c‴ d‴ e‴*.]

HURDY GURDY

X22. CYMBAL

C . . . [illegible] 4 Gutts whereof the two outer are Drones tuned to 5ths, the two middle are Unisons, which are stopd by means of 20 wooden Keys touched by left hand while right turns the Wheel. To each string in each Key two iron Pins or Cogs wch press the string in nature of Fretts & return by force of string as spring.
The proper [?] Notes are distinguished in the Keys by cross bitts of wood on the left side at wch they are touched to distinguish the half Notes. The box for the Keys has its cover as has the wheel [inserted later] whereof Cover turns in a Groove.
Bridge about 1′.2″ below the wheel, wch is turned by a Key at the breech.
Between the box & wheel a Knot.
Axtle tree of wheel fastened above to a Pin wch passes from the back of the belly & is 1′ above it at bottom of Knott.
Thickness of Rim 3′.6″: From body to Nutt 4′.
Length of Box 1*f*.2′.4″. Height 1′.6″. From Box to wheel 4′.
Length of Belly 1*f*.3.
Divide Keys as Fretts of Cittern.

REMARKS ON THE BOWED INSTRUMENTS

Though measurements are, because of their effect on tone, as important in stringed instruments as they are in wind, they do not provide the same exact information concerning the pitch. In the violin family, deviations of size in instruments of the same pitch are remarkably slight, and the measurements given in the Talbot MS form no exception to this rule, with certain possible exceptions or mistakes to which attention will be drawn. In the viol family, however, such deviations are often very considerable indeed, and even make it difficult at times to decide to what notes the instrument in question was intended to be tuned.[1]

This problem is further complicated by our uncertainty as to the

standard of pitch to be assumed.[2] Thus, for example, we may decide that a viol, though very small for a tenor, was intended to be tuned as such. We may then suspect that the standard of pitch generally obtaining at the time and place where it was first brought into use was abnormally high, so that the instrument, as befitted its small size, actually stood at a pitch higher than that usual for a tenor viol.

But even this suspicion cannot be confirmed, as we can confirm the actual sounding pitches of wind instruments from their measurements where these are exactly known. For experience shows that even a very small tenor viol may yield an outstandingly fine tone when tuned as a tenor on a 'normal' standard of pitch, such as our present concert pitch ($a'=440$ c.p.s.) or even the so-called 'classical' pitch about a semitone lower still. The same instrument may also sound well when tuned as an alto, that is to say a fourth higher throughout, particularly if the comparatively low 'classical' standard of pitch is adopted. In such a case, the decision between treating the viol as a small tenor and treating it as a large alto becomes little better than a subjective judgment as to which tuning gives it the better tone.

The same problem arises in a still acuter form when it is a matter of deciding whether to treat a given viol as a small alto or a large treble, since the tuning (and therefore the nominal pitch) of these lies only a tone apart. Here, a careful experiment is the only test possible.

In the case of bass viols, a similar latitude obtains; but when the bass is decidedly small, we should most naturally regard it, at least in England, as a 'division' bass intentionally built to smaller dimensions than a full chamber or 'consort' bass, in order to facilitate the virtuoso passages characteristic of the division music (variations on a ground) for which this instrument is primarily intended. An even smaller English bass can almost certainly be regarded as a so-called 'lyra' viol: a diminutive bass of variable tunings adapted to the easy execution of full chords in different keys. But it may become difficult, once more, to distinguish a large tenor from a small lyra viol.

A stringed instrument possessed of a markedly shorter than average sounding length of string and a markedly smaller than average resonating air cavity is likely to sound tubbier, richer, less clear and reedy than one whose dimensions are at or above the average for the pitch in question. Either quality may be preferred as a matter of taste; but I have encountered quite outstanding specimens of each amongst the viol family. The reason, of course, is that other factors enter.

The shape[1] is one of these: viols are found in an extraordinary variety of shapes, including some very near approaches to the violin form; but what is still more extraordinary is how little this particular

factor appears to influence the tone. A much more crucial matter is the thickness of wood at different points: in no respect will the craftsman's excellence be more in evidence. In general, thinner wood and slacker strings appear to be the chief factors differentiating the tone of the viols from that of the violins. Thicknesses, unfortunately, are not among the dimensions which Talbot has regularly noted; nor does he mention string gauges, a matter of almost equal importance and much greater uncertainty, since old viols survive but their original strings do not, with the rarest exceptions.[3]

In the dimensions which Talbot has recorded, the same ambiguities prevail as confuse some of his measurements of wind instruments. For example, the length of a bow may be measured from end to end of the stick, or from end to end of the hair: the latter measurement is the more valuable and appears to be what Talbot intends; but he does not tell us. Even if this assumption is correct, we cannot be certain whether to measure from the actual mortices, or from the point at which the hair is free of the stick and thus available for use: again the second method is the most advantageous, but in this respect, since the difference is smaller, we cannot even infer which Talbot applied.[1] The resulting uncertainty diminishes to some extent the usefulness of his information; and similar uncertainties occur elsewhere. He is silent, too, or almost silent, on some of the questions where, being most in the dark, we should be most grateful for exact illumination, as, for example, the real status of the alto viol and the tenor violin (as opposed to the viola) in late seventeenth-century England. Nevertheless, we are indebted to him for some extremely welcome information. In the following most tentative notes, I have drawn attention to several points which have occurred to me; but I am confident that more remains to be extracted, and I look forward to benefiting in due course from the investigations of other members.

THE VIOLIN FAMILY

The chief discrepancy between Talbot's measurements and those regarded as the average standard is his total length for the violoncello of 3′ 8″ against the 48½″ given in Grove.[4] But the figure is a subsequent insertion; if it is not an actual error, it may be the measurement of a particular and exceptional instrument (cf. Grassineau, *Musical Dictionary* (1740), 'BASSETTO, a *Bass Viol* or *Violin* of the smallest size, so called in distinction of Bass Viols or Violins of a larger size'). The length obtained, on the other hand, by adding together Talbot's figures for separate portions works out at 47″, which may be taken as reliable.

There is certainly an error in the figure of 3½″ for 'the depth of the

Violin under the Bridge'. Whether intended as an internal or as an external measurement, this gives a belly like a camel's back. I imagine $2\frac{1}{2}''$ was meant, which is quite normal. The bridge, at $1''$ high is lower by perhaps $\frac{1}{4}''$ than would now be usual with this degree of belly arch. This accords with our established view that the Baroque bridge was lower in the centre (i.e. flatter, less steeply curved) and the Baroque neck and strings set back at a less steep angle than our present fittings. Talbot's fingerboard is wider by about $\frac{1}{8}''$ at its top, but narrower by about the same amount where it ends (after allowing for the shorter length) than the modern average, implying that the strings are less widely splayed out. The lateral dimensions of the bridge remain unchanged, it is true, but with such a fingerboard we can reasonably take this as meaning no more than that the outermost strings are set further in from the extremities of the bridge than is now usual.

Talbot's $5\frac{1}{4}''$ for 'the length of the Neck from the Nutt to the Belly' appears to be about $\frac{1}{8}''$ on the *long* side unless measured to include the depth of the nut itself (this is likely since no separate allowance is shown for the nut and the separate figures add up correctly to a normal overall length) in which case it is normal. But in neither case have we a short neck such as contemporary makers are generally thought to have favoured (cf. the Stainer violin with original fittings in the possession of Kenneth Skeaping, of which the neck is $\frac{1}{4}''$ shorter than the modern norm).[5]

The importance of these factors relates partly to tone quality, partly to the technique and effect of three and four part chords. Shorter strings, less set back, tuned to the 'classical' pitch, and resting on a flatter bridge, are very markedly less tense than obtains with modernized fittings; they sound purer and clearer but less intense in quality, and they require less violence in depressing them sufficiently to give a three or four part chord. These differences are of great value in our attempts to render Baroque violin music (particularly J. S. Bach's solo suites and other works containing three and four part writing) adequately and in its own proper sonority.

Talbot's testimony for a violin neck of modern length is probably to be accepted; if so, we must assume that very substantial variations of length occurred. An error may be suspected in the very short sound holes given for the violoncello. Violins 'Fretted for Beginners' is borne out by (or pirated from) Playford.[6]

Top a''' can be taken on the length of violin fingerboard given: f''' is the highest note mentioned, in a passage whose technical implication will puzzle violinists. (Talbot's length is average for his period; the modern fingerboard is $2\frac{1}{2}''$ longer.) Top a' can be taken on Talbot's

violoncello fingerboard, which is given shorter in proportion, thus confirming that high virtuoso passages were not yet expected on this instrument.

Lewis, six-stringed Bass Violin has a neck 'somewhat shorter . . . to bear a Pitch', which can only imply a *higher* pitch; but a 'treble string' equal to '3d of B. Violin', which should normally give *F* or *G*, '(or B. Viol)', which should normally give *e*—very different pitches, and both of them *lower* unless Talbot's calculations are an octave out. But if the reality behind this most bewildering note could be interpreted (and I can myself think of no other explanation) as a *small* chamber *double* bass of a size familiarly established on the Continent, 'tuned B.Viol.way' and pitched between the *D* (or *C*) to *d'* Bass Viol and the regular violone an octave lower, we might regard it as confirming what is in any case the likeliest answer to the old problem of Orlando Gibbons' 'musique for the Great Dooble Basse', in spite of the rather wide gap in date.[7] Gibbons' 'Dooble Basse' part lies a little too high to suggest a regular violone quite convincingly, and only descends to A_1. Yet this is a minor third too low for the normal bass viol, and Gibbons' date is much too early for us reasonably to assume a seven-stringed bass viol (A_1 to *d'*) even if the low passages were not too persistent to render this explanation plausible. A small chamber double bass would exactly fit the bill, and may well be Talbot's meaning.

In a note evidently based on Mersenne,[8] a violin *F* to *d* is given, which is a true tenor, between the viola and violoncello in both pitch and size; but unfortunately (and perhaps significantly) there is no first-hand information, the space beneath the heading 'Violin Tenor & Counter Tenor' remaining blank. We cannot safely infer from the mere inclusion of this heading that Talbot personally knew and intended to describe two separate instruments; on the contrary, separate instruments are normally given separate headings in his MS, even where a blank space follows. However, it is not impossible. The 'musicians for the violins' listed in the Lord Chamberlain's accounts for 1631 are three 'treble', two 'contratenor', three 'tenor', two 'low tenor', and four 'basso'.[9] As with Talbot's heading, this *may* merely indicate separate parts, not separate instruments, i.e. first and second violins, first and second violas, basses. It can hardly mean three first violins, two second violins, three violas, two violoncellos and four double basses, which would grossly overweight the double basses. I am tempted to suggest that the most reasonable interpretation is three first violins, two second violins, three violas, two true tenor violins, and four basses (one of them possibly a double bass, doubling the part at the octave below). Dowland's *Lachrimae* of 1605 'for the Lute, Viols,

or Violins' includes a part just within viola compass but much better suited to a tenor violin. This is some time before Talbot; but if Purcell's fantasies of 1680 are violin music rather than viol music (as their style and date somewhat suggest, though far from conclusively) they definitely necessitate a tenor violin. Yet Playford, the first English authority to give violin tunings, only mentions 'treble' (violin tuning) 'tenor' (viola tuning) and 'bass' (low violoncello tuning $B_{,}\flat$ to g).[10] It cannot be felt that Talbot solves this important and quite uncertain problem for us; but a solution would be very welcome. We can prove that the early violin family included this true tenor member; we can point to much seventeenth-century Italian violin chamber music requiring its presence; we are to this day the poorer for its disappearance. But we do not know when, still less why it disappeared, and we cannot even decide with confidence whether it flourished or even existed in Purcell's England.

There is an interesting and valuable distinction drawn by Talbot between 'the usual length' (2′) 'of the Consort Bow' (violin) and 'the length' (from 2′ 2″ to 2′ 3″) 'of the Bow for Solo's or Sonata's'. Both pictures and surviving specimens show a variation in bow length of surprising extent, and Talbot's distinction goes some way towards explaining it.

The *Compleat Musick-Master* by T. B. (1722) gives 'Let your [violin] *Bow* be as long as your instrument'; i.e. perhaps 1′ 11″. This, and even Talbot's 2′, is a very short bow if the measurement is of the stick length. But if it is of the length of the free hair, it corresponds with the commonest length of surviving specimens, which most frequently run to about 23½″ of free hair.[11] A shorter length, though admirably delicate and incisive for Corelli allegros and the like, proves hampering for sustained movements; the 2′ bow proves ideal for seventeenth- and eighteenth-century music generally. The curve of the wood is, of course, always outwards from the hair (which facilitates the sharp attack and incisive technique proper to the period) and not inwards as in the Tourte pattern (which facilitates a smooth attack and a sostenuto technique). 'Fine speckled-wood' refers to snake wood, a normal material of the period.

Under 'Z' Talbot gives 'Bow of violin not under 24′ from there to 27½ at most. 27, 26-25½ Solo-Bow'. A modern bow of 25½″ would be quite average (free hair length). But 27½″ seems at first sight on the verge of the unmanageable. The clue is almost certainly to be found in the variation of the bow hold shown in the pictures of the period, and confirmed (though less positively for the violin than for the viol) by theoretical writers. Rafael[12] shows in a 'Coronation of the Holy Virgin'

a fifteenth-century lyra da braccio bow held with an exact replica of the modern grip recommended by that great teacher of the violin, the late Professor Carl Flesch.[13] This effectively employs the full length of the $25\frac{1}{2}''$ bow. But there are numerous seventeenth- and eighteenth-century depictions of a hold more or less up the stick, sometimes as much as 2″ or 3″ away from the nut. With the latter technique, a very long bow can be balanced with ease. It can be used to its extreme point without over-stretching the arm on the down bow; and to its extreme heel by carrying the hand well over and beyond the strings at the end of the up bow.

THE VIOL FAMILY.

There are echoes of Mersenne in an 'Italian' tuning for 'Tenor and Contratenor' viol *A* to *a'* (this is what Cerreto gave at Naples in 1601); an alternative 'Tenor' *G* to *g'* and 'Counter-tenor' *A* to *a'* is given, besides the familiar *c* to *c''* alto (counter-tenor) tuning still recognized by Rousseau in 1687. But I can find no first-hand clues in the Talbot MS; I hope sharper eyes may do so. The alto viol is nearly as hard to establish in seventeenth-century England as the tenor violin; yet there are far stronger reasons for presuming it: surviving viols which sound at their best (at 'classical' and still more at standard $a' = 440$ pitch) when tuned *c* to *c''*; and four-part music which seems to cry out for one each of the treble, alto, tenor and bass viols. The fact remains that no contemporary authority, not Playford, not Simpson, not Mace, not North, as much as mentions it, either by name or by tuning. Playford speaks of 'three several sizes . . . *viz. Treble-Viol, Tenor-Viol, and Bass-Viol*'.[15] Mace's chest of viols is two trebles, two tenors, and two basses; and he distinctly identifies the 'Tenors' as '*a 4th Higher*, than your *Basses*'.[16] If an alto had been available, Mace of all people might have been expected to insist on it!

I have only found two actual references, and neither is conclusively (though both seem reasonably) free from the usual ambiguity whether two distinct instruments are in question or merely two parts: in Anthony Wood's *Diary*,[17] a Mr Ellis 'would take up a counter-tenor viol and play, if any person were wanting to perform that part'; and 'the gentlemen in private meetings, which A. W. frequented, played with three, four and five parts with viols, as treble-viol, tenor, counter-tenor, and bass' (cf. Butler: 'The Countertenor or *Contratenor*, is so called, because it answereth the tenor; though commonly in higher keys').[18] My own feeling is that we must accept an English seventeenth-century *c* to *c''* alto viol, if only as a comparative rarity. But I should be remarkably glad to see it adequately proved.

The 'Tenor Viol' and 'Bass Viol' measurements are so Gargantuan on English standards that I can only guess Talbot to have been confusing them with the *German* nomenclature by which *Tenor Viola* indicates an English-sized bass; *Kleine Bass-Viola* and *Grosse Bass-Viola* a definitely small and a definitely large violone. The whole passage smacks strongly of Praetorius, whose *Tenor* and *Kleine Bass-Viol* tally fairly closely with Talbot's 'Tenor' and 'Bass' respectively.[19] It is perhaps just worth remembering that Gottfried Finger, Talbot's informant on the 'Tromp Marine, Treble & Tenor Viols, Double Bass, Cymbal', was a German only resident in England for about six years, whereas Talbot's informant on the Bass Violin was the Londoner James Paisible. My guess is perhaps supported by Talbot's otherwise curious remark that '[there are] Bass Viols of all sizes [? of which, or in relation to which, the] least large [? is] the Bass Violin'—not that this last statement becomes on any interpretation a model of lucidity.

The 'Division Viol' measurements are not unreasonable, though still perhaps a little large. (But cf. T. B.'s *Compleat Musick-Master*: 'a Viol of Division size, which ought to carry a string of thirty inches from the Bridge to the Nutt, may serve either to play in Consort or a single Lesson, or both as you will have it strung. . . .' That is long for a Consort, and very long for a Division, viol.) The 'Lyra Viol' again approximates rather to the German Viola Bastarda than to the English Lyra. The Double Bass measurements are those of a normal orchestral six-footer of the present day; and Talbot's treatment of this instrument among the viols rather than the violins, as well as his references to 'Fretts 5' and 'Generally 5 Strings sometimes 6', tends, I think, in favour of the view now current (but strongly challenged by Mr Eric Halfpenny) that the modern double bass actually (unlike the violin family proper) evolved by stages from the double bass member of the *viol* family, gradually losing frets and strings as it went.[20]

The tenor bow at 28″ seems distinctly tall, still more so a Lyra and Division viol bow at 30″, and a Bass viol bow at 31″; but what are we to make of a double bass bow at 36″, even though this dwindles lower down to 31″! I have been tempted to wonder whether some of these apparent exaggerations might arise from an intermittent confusion with the Brunswick foot used by Praetorius. One Brunswick foot=11·235 English inches. Even so, a 36 (Brunswick) inch bow remains about 32¾ (English) inches long; and such a bow, though not impossible, is still most improbable as a standard implement. And we have no real reason for attributing to Talbot this particular confusion: it seems improbable enough.

I feel sure that many of the difficulties tentatively touched upon

above may disappear, and the underlying information stand revealed, at the hands of the relevant specialists among my fellow members, to whom I cordially commend this most interesting manuscript.

NOTES

[1] For exact measurements of a number of viols (also bows) and a discussion of their sizes, shapes, pitches and classification, see N. Bessaraboff (now Bodley), *Ancient European Musical Instruments* (1941), pp. 255–89, 357–76; G. R. Hayes, *Musical Instruments and their Music: II, The Viols, and Other Bowed Instruments* (1930), pp. 1–19, 36–55, 249–52.

[2] The most recent researches into the extremely complicated question of Renaissance and Baroque standards of pitch, and of the remarkably wide variations for which evidence exists, will be found in A. Mendel, 'Pitch in the Sixteenth and Early Seventeenth Centuries,' Pts. I–IV, *Musical Quarterly*, XXIV (1948), 1–4. There is also an important discussion in Bessaraboff, *op. cit.*, pp. 357–73.

[3] Hayes, *op. cit.*, p. 27, mentions the discovery of 'more than one viol' (including a bass seen by himself in 1926) 'with strings and frets still attached'; unfortunately he gives no measurements.

[4] (3rd edn. 1928), V, p. 522.

[5] The brothers W., A. F. and A. Hill, *Antonio Stradivari* (1902) give many exact details of early violin fittings.

[6] *Introduction to the Skill of Musick* (7th edn. 1674), p. 110.

[7] Christchurch, Oxford, MSS 732–6 (a modern edition with note values halved and the music transcribed up a fourth has been published by E. H. Fellowes; Stainer and Bell Ltd, n.d.).

[8] *Harmonie universelle* (1636), Livre Quatrieme des Instrumens, pp. 179ff. Talbot refers by name to the double-bass 'de Lorraine' mentioned by Mersenne on p. 179.

[9] H. C. de Lafontaine, *The King's Musick* [1909], gives this entry; it is from the Lord Chamberlain's Records, Vol. 738, p. 242.

[10] *Op. cit.* The first two editions do not include instructions for the violin; my copy (7th edn. 1674) still treats only the 'Treble-Violin'; Hayes, *op. cit.*, p. 186, cites the edn. of 1687, p. 108, for the tunings of 'tenor' and 'bass'.

[11] Hayes, *op. cit.*, pp. 250–51, gives 'treble viol' bows of 23″ and 20¾″; 'bass viol' bow of 23¾″; 'alto or tenor viol' bow of 23¾″; 'violoncello' bow of 23½″. All have screw nuts, which may or may not be the original; and the only way of actually distinguishing a viol from a violin bow of this period is by the usually more rounded outermost corner of the nut. My experience confirms these lengths as typical.

[12] M. Sauerlandt, *Musical Instruments in Pictures* [1922], p. 49; cf. also p. 50 for an extremely long bow.

[13] C. Flesch, *Art of Violin Playing*, I (1924), Illustration 19; cf. Leopold Mozart, *Violinschule* (1756) where different holds are shown.

[14] Mersenne, *loc. cit.*; Scipione Cerreto, *Della Prattica Musica* (1601); Jean Rousseau, *Traité de la Viole* (1687), p. 21.

[15] *Op. cit.* (7th edn. 1674), p. 91.

[16] Thomas Mace, *Musick's Monument* (1676), p. 246.

[17] March 1656; and January–March 1657.

[18] C. Butler, *Principles of Musick* (1636), p. 41. I have modernized the phonetic spelling used in this work, which could not be set up without special type.

[19] Praetorius, *Theatrum Instrumentorum*, Table XX. For the attribution of the name *Kleine Bass-Viol* to the largest instrument shown there, and for the calculation on which his tenor dimensions are estimated, see Bessaraboff, *op. cit.*, pp. 359–73, 376, and note 916 (p. 443).

[20] Hayes, *op. cit.*, p. 210; Bessaraboff, *op. cit.*, p. 311; Halfpenny, 'A Note on the Genealogy of the Double Bass,' *The Galpin Society Journal*, I (1948), p. 41.

★

REVIEWERS:

A. B. Anthony Baines
D. Editor

Several reviews intended for this number of the JOURNAL have had to be held over, through lack of space, until the next issue.

★

ALEC HODSDON

LAVENHAM, SUFFOLK · TELEPHONE 262

Harpsichords

5 octave, 2-manual instruments, with four 8-ft., one 16-ft., and one 4-ft. stops. 175 guineas. More elaborate specifications are also used.

Clavichords

4 octaves and a fourth, B to E, fret-free. 50 guineas.

Virginals

4 octaves and a third, C to E, short octave to G; made in the tradition of the 16th and early 17th centuries, with essential characteristics including both bridges on the soundboard and jacks diagonally across it, sounding at 8-ft pitch. 50 guineas.

LUTES (19 STRINGS) 35 GUINEAS · VIOLS IN ALL SIZES
ANTIQUE INSTRUMENTS

above may disappear, and the underlying information stand revealed, at the hands of the relevant specialists among my fellow members, to whom I cordially commend this most interesting manuscript.

NOTES

[1] For exact measurements of a number of viols (also bows) and a discussion of their sizes, shapes, pitches and classification, see N. Bessaraboff (now Bodley), *Ancient European Musical Instruments* (1941), pp. 255–89, 357–76; G. R. Hayes, *Musical Instruments and their Music: II, The Viols, and Other Bowed Instruments* (1930), pp. 1–19, 36–55, 249–52.

[2] The most recent researches into the extremely complicated question of Renaissance and Baroque standards of pitch, and of the remarkably wide variations for which evidence exists, will be found in A. Mendel, 'Pitch in the Sixteenth and Early Seventeenth Centuries,' Pts. I–IV, *Musical Quarterly*, XXIV (1948), 1–4. There is also an important discussion in Bessaraboff, *op. cit.*, pp. 357–73.

[3] Hayes, *op. cit.*, p. 27, mentions the discovery of 'more than one viol' (including a bass seen by himself in 1926) 'with strings and frets still attached'; unfortunately he gives no measurements.

[4] (3rd edn. 1928), V, p. 522.

[5] The brothers W., A. F. and A. Hill, *Antonio Stradivari* (1902) give many exact details of early violin fittings.

[6] *Introduction to the Skill of Musick* (7th edn. 1674), p. 110.

[7] Christchurch, Oxford, MSS 732–6 (a modern edition with note values halved and the music transcribed up a fourth has been published by E. H. Fellowes; Stainer and Bell Ltd, n.d.).

[8] *Harmonie universelle* (1636), Livre Quatrieme des Instrumens, pp. 179ff. Talbot refers by name to the double-bass 'de Lorraine' mentioned by Mersenne on p. 179.

[9] H. C. de Lafontaine, *The King's Musick* [1909], gives this entry; it is from the Lord Chamberlain's Records, Vol. 738, p. 242.

[10] *Op. cit.* The first two editions do not include instructions for the violin; my copy (7th edn. 1674) still treats only the 'Treble-Violin'; Hayes, *op. cit.*, p. 186, cites the edn. of 1687, p. 108, for the tunings of 'tenor' and 'bass'.

[11] Hayes, *op. cit.*, pp. 250–51, gives 'treble viol' bows of 23″ and $20\frac{3}{4}$″; 'bass viol' bow of $23\frac{3}{4}$″; 'alto or tenor viol' bow of $23\frac{3}{4}$″; 'violoncello' bow of $23\frac{1}{2}$″. All have screw nuts, which may or may not be the original; and the only way of actually distinguishing a viol from a violin bow of this period is by the usually more rounded outermost corner of the nut. My experience confirms these lengths as typical.

[12] M. Sauerlandt, *Musical Instruments in Pictures* [1922], p. 49; cf. also p. 50 for an extremely long bow.

[13] C. Flesch, *Art of Violin Playing*, I (1924), Illustration 19; cf. Leopold Mozart, *Violinschule* (1756) where different holds are shown.

[14] Mersenne, *loc. cit.*; Scipione Cerreto, *Della Prattica Musica* (1601); Jean Rousseau, *Traité de la Viole* (1687), p. 21.

[15] *Op. cit.* (7th edn. 1674), p. 91.

[16] Thomas Mace, *Musick's Monument* (1676), p. 246.

[17] March 1656; and January-March 1657.

[18] C. Butler, *Principles of Musick* (1636), p. 41. I have modernized the phonetic spelling used in this work, which could not be set up without special type.

[19] Praetorius, *Theatrum Instrumentorum*, Table XX. For the attribution of the name *Kleine Bass-Viol* to the largest instrument shown there, and for the calculation on which his tenor dimensions are estimated, see Bessaraboff, *op. cit.*, pp. 359–73, 376, and note 916 (p. 443).

[20] Hayes, *op. cit.*, p. 210; Bessaraboff, *op. cit.*, p. 311; Halfpenny, 'A Note on the Genealogy of the Double Bass,' *The Galpin Society Journal*, I (1948), p. 41.

★

REVIEWERS:

A. B. Anthony Baines
D. Editor

Several reviews intended for this number of the JOURNAL have had to be held over, through lack of space, until the next issue.

★

ALEC HODSDON

LAVENHAM, SUFFOLK · TELEPHONE 262

Harpsichords

5 octave, 2-manual instruments, with four 8-ft., one 16-ft., and one 4-ft. stops. 175 guineas. More elaborate specifications are also used.

Clavichords

4 octaves and a fourth, B to E, fret-free. 50 guineas.

Virginals

4 octaves and a third, C to E, short octave to G; made in the tradition of the 16th and early 17th centuries, with essential characteristics including both bridges on the soundboard and jacks diagonally across it, sounding at 8-ft pitch. 50 guineas.

LUTES (19 STRINGS) 35 GUINEAS · VIOLS IN ALL SIZES
ANTIQUE INSTRUMENTS

NOTES AND QUERIES

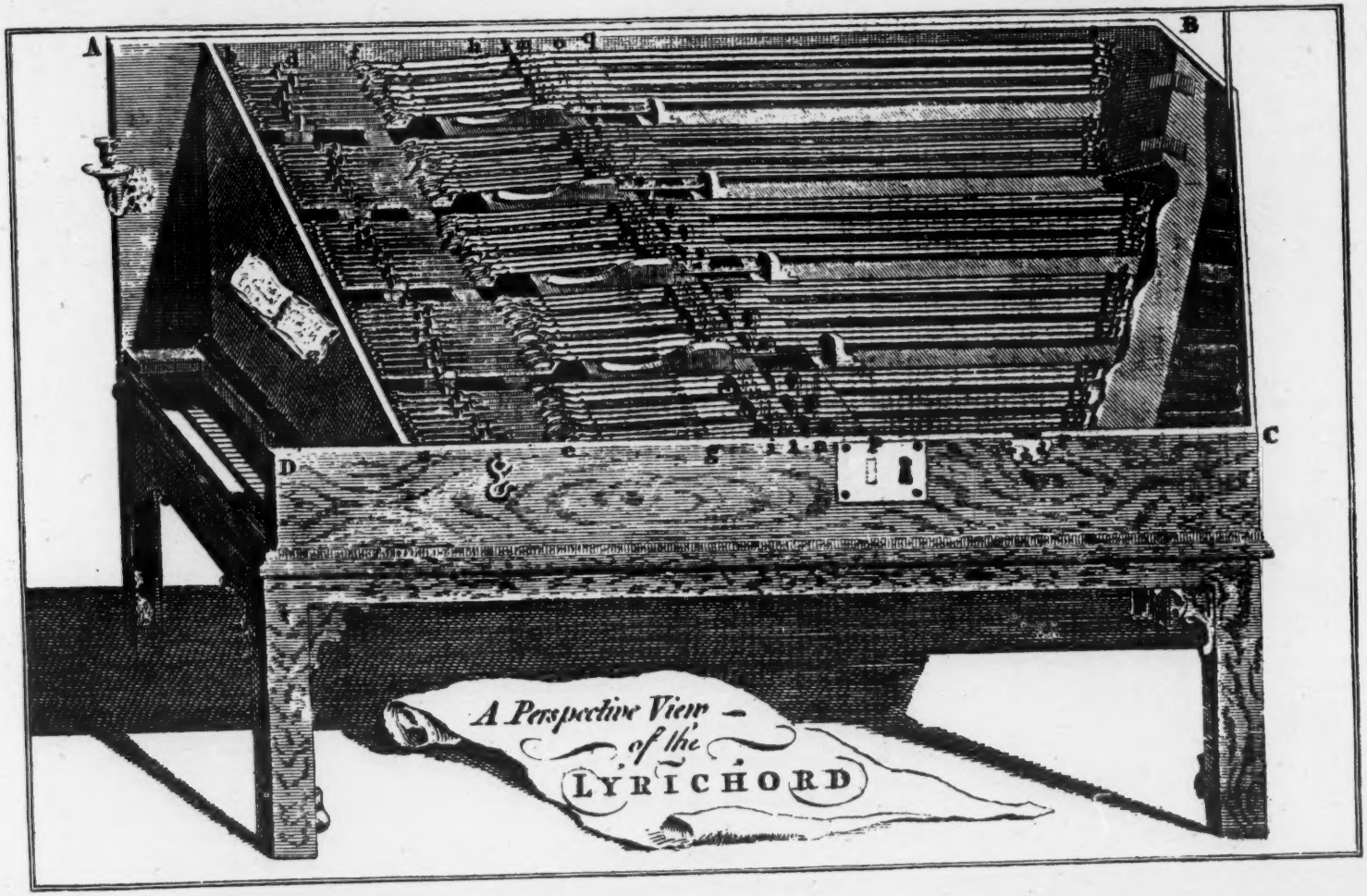
THE LYRICHORD

In his book, *A Description and History of the Pianoforte* (1896) and also art. 'Sostinente Pianoforte' in the first edition of Grove, the late A. J. Hipkins mentioned a drawing and description of the *Lyrichord* of Roger Plenius, taken from a magazine of 1755, in his possession. With characteristic penetration Hipkins seized on the many interesting points of detail in Plenius' invention, especially those which foreshadowed some aspects of pianoforte construction, but he gave no clue as to his exact source of information, and no subsequent writer appears to have noticed it.

Another copy of these pages has recently come to light, and the source has been identified as *The General Magazine of Arts and Sciences*, a periodical edited by Benjamin Martin between the years 1755 and 1764. The article is in B.M. 250.K.16, pp. 131-2 (August 1755). In another part of this work entitled *The Young Gentleman and Lady's Philosophy* (250.K.9, p. 381) there is a master-and-pupil dialogue on the Lyrichord. Indeed, the Editor seems to have 'featured' the instrument, and it is the only one treated in detail throughout the dozen volumes of this curious work. The article is worth reproducing as a model of full and lucid organological description certainly unique for its time. The inventor is nowhere mentioned by name; but the opening paragraph is sufficiently close in wording to Plenius' own manifesto in *The London Evening Post* for February 14th, 1747 (quoted by James) to leave no doubt that the instrument is his.

By Plenius' day there was a long, if fitful precedent for stringed claviers which went 'with a whele', but this resourceful inventor appears to have elaborated and perfected an original design down to the last detail, with an ingenuity worthy, as we should say, of a better cause. Some of the devices used were the subjects of patents, but Hipkins is misleading when he says that the instrument itself was patented. Of the two Plenius patents, only the first, No. 581 (1741), mentions the Lyrichord, and that only in passing: 'A New Invention for the great Improvement and Meliorating the Musical Instruments called Harpsichords: Lyrichords, which are Harpsichords strung with Catgut: etc.'

In addition to the features noted by Hipkins, we may observe that the elaborate means for stretching the strings by weights was dictated by the need to keep them at even tension when displaced by depressing the keys (this matter is discussed at length in the *Young Gentleman and Lady's Philosophy*): that the instrument was capable of


A
B
C
D
A Perspective View
of the
LYRICHORD

bebung or close-shake: that the scaling of the strings, between 6″ and 30″ over fifty-nine notes, was much shallower than on the harpsichord, and more akin to the string-lengths on bowed instruments, with all that that implies: that the motive power for the wheels was clockwork: that there were two varieties of *crescendo*, (*a*) by pressing harder on the keys, (*b*) by raising a swell cover on the lid: and that the wheels were sometimes *greased*, not resined—an interesting sidelight on the behaviour of the *vielle à roue*.

The one point which requires further elucidation is the fact that the pull-downs or hook-jacks are of necessity on the inner side of the front bridge. There is a double hook for each string, and it looks at first sight as though these were the true forward limits of the vibrating lengths of the strings. But since strings excited by continuous friction do not vibrate freely but are always displaced more or less from the straight line, it is likely that these hooks did no more than blur the 'open-string tone' between the bridges, making it perhaps more sympathetic and similar to that of the normal bowed instruments.

Tribute must be paid to the anonymous writer and draughtsman, whose superior skill and observation completely overshadows the contemporary Diderot. One could have wished that they had been moved to illustrate and describe other instruments of the period.

ERIC HALFPENNY

A Description of the Nature and Construction of the LYRICHORD

It is presumed that most of our Readers either understand or delight in Music, or at least will be pleased with an Account and Description of the LYRICHORD, which (to use the Inventor's own Words) is the most curious musical Instrument ever invented; we are told by him, that it has cost him 500 Pounds and 20 Years Study and Application to compleat it, and that it is now brought to a great Degree of Perfection. That it imitates the *Violin*, *Bass-Violin* and *Duble Bass*; and tho' it has no *Pipes*, yet, when play'd full, it resembles a perfect *Organ*; and is touch'd by *Keys*, like an *Harpsichord*. That it admits of playing *loud* and *soft*, and the *close Shake*; as also of *swelling* any single Note or many Notes together by the single Pressure of the Fingers. But (what is most of all surprizing, and indeed incredible if not seen, yet plainly demonstrable to every one) *its Strings never go out of Tune*, as long as the Materials of which the Instrument consists remain entire. A Thing hitherto deem'd impossible to find out.

This is the Author's Account of his Machine, to make good which, and to gratify the Curiosity of the Public, we have given a Perspective of the Whole laid open, and shall here subjoin a concise Description of the essential Parts thereof, having first premised, that they consist of five Systems of Strings; each System of three Bars or Sets of Strings; and four Strings in each, except

one Set of the longest of all, which has but 3 Strings; so that upon the whole there are 59 Strings in the Instrument. These Strings are severally stretched by Weights appended to Levers, and made to sound by being drawn down on the Periphery of moving Wheels to be *touch'd* by them instead of the *Quills* in a common *Harpsichord*, or a *Bow* in the *Violin-kind*. Therefore,

a b e f represents the System of 59 Brass Levers; on the inmost End of each Lever is Part of the Circumference of a Circle (somewhat more than a Quadrant) in the Centre of which Circle is an Axis upon which the Lever is supported and moves on a proper *Fulcrum*. These circular Parts all appear in a Row from *e* to *f*.

From *a* to *b* on the under Side of each Lever is hung a long cylindric Weight of Lead about an Inch in Diameter, more or less, which answers the Purpose of a *Ballance* or *Poise* to the Lever when barely connected with the String.

From *c* to *d* appear the *Screws* by which large Weights are moved forwards and backwards on the Levers, proportion'd in such a Manner as to give a *due Degree of Tension* to each respective String. In *tuning* the Instrument these Screws are moved with a Key, and consequently the Weight, till the String acquires its proper Tone; and when once they are put in Tune, they must always remain so (unless disordered by Accident) because they are always under the same Degree of Tension from the equal Action of the Weights. And in this consists the *peculiar Nature* and *Artifice* of the LYRICHORD. Note, the *Weights* we now speak of, are long, wide, and thin, that they may move freely by each other under the Levers.

From *e* to *f* appear the *circular Arches* at the End of the Levers, as was said before; in each of these a Pin is fix'd near the Lever, on which is put the Loop of *Brass Wires*, or *Silken Strings*, which on the other End are connected with the *musical Strings*, and by which they are stretch'd, and easily taken on or off.

From *i* to *k* are the *Bridges* on which the Strings are strain'd in each System, and which terminate their musical Length on this Part.

From *i* to *m* is a Row of *Brass Jacks* (as we may call them) one to each String, which hang upon the String by two Hooks; and when put into Motion, draw the String down on the Wheel. They are put into Motion by the Keys, which are touch'd by the Hand of the Musician as in a Harpsichord; only, by a double Lever below, these move downward, as they, by a single one, move upwards. The Hooks on the Tops of the Jacks are adapted to the Strings, by a *Nut* and *Screw*.

In the open Part *n o p q* are placed the *Wheels* and *Pulleys* on an Axle about 5 or 6 Inches long, and so that the Perimeter of the Wheels in each Set is but a little below the Strings; for *one Wheel* suffices for a Set of 4 Strings: there are therefore 3 Wheels in a System, and 15 in the whole. The Surfaces of these are fitted in a proper Manner to strike the Strings when by the Jacks they are drawn down upon them for a *momentary Touch*. Instead of *Rosin* they apply *Tallow*, sometimes, to the Surface of the Wheels. They are about 4 Inches in Diameter and moved by the Machinery within-side, all at once, and with different Velocities, those which touch the shortest Strings moving fastest. When the Machine is wound up, they are all set a going by a great Weight on the Back-part of the Instrument.

In the Space *p q r s* lie all the Systems of Strings, some of which are Wire, others Catgutt, and the larstest Sort wrought or cover'd with Silver-wire, like those of the largest *Bass-Violins*. Between the Bridges, the longest Strings

are about 30 Inches, and the shortest about 6; as near as we can recollect, having seen this Instrument but once.

The *Lid* or *Cover* of the Instrument consists of *two Parts*; in Playing, one is shut down generally, and the other, which lies over the Strings, is moveable up and down by the Foot of the Musician, by which Means he can *swell the Notes*, and make them *louder* or *softer* at Pleasure.

What farther relates to this singular and curious Invention must be deferr'd 'till we come to treat of the *Philosophy* of *Music*; in the mean time we hope an Idea thereof will not be difficult from this Representation; and such as have Opportunity, and Taste, will, we imagine, find it well worth their While to see the Instrument itself.

CALLCOTT'S RADIUS FRENCH HORN

TO THE EDITOR:

The instrument described by Mr Bate under NOTES AND QUERIES in your last number has now passed into my possession, and a very curious and interesting specimen it is. No other example of this, or of any other type of English-built omnitonic horn has, so far as I am aware, come to light.

Its maker, John Callcott, seems to have produced it just in time for the 1851 Exhibition, in the large catalogue of which it is described in the following rather cryptic language:

> 'Newly invented French horn; the novel feature being its portability, the loose crooks commonly used being dispensed with: to change key, a continuous tube is graduated into thirteen parts, each part being a semitone, at each of which again an opening is made, into which is inserted a short tube, leading from the belt of the horn to the centre of the hoop, and there turning in any direction, which receiving the wind as it passes through the horn bears it away to the belt.'

Rudall, Rose & Carte, in their 1854 price list, quoted the Radius French horn at £14, or ten shillings less than they charged for a two-valve horn with five crooks. The invention of course came too late to make any wide appeal, while its initial cost was no doubt considered too high for what, after all, was something of an *instrument de fantaisie*.

Callcott, who entered the band of the Coldstream Guards when very young, was third horn at the Opera for many years, under Spagnoletti, Costa and others. He also became bandmaster of the 1st Surrey Volunteer Regiment, and was awarded a gold medal for the band's performance in Brussels. He died at Richmond at the age of 81 on February 19th, 1882.

The cor omnitonique originated in France, the earliest known example being in the museum of the Paris Conservatoire (No. 1184

in Pillaut's *Ier supplément* to the Chouquet 1884 catalogue). It is signed 'J. B. Dupont, Paris' and is probably an experimental model made about 1815. At all events in 1818 he patented a much better designed cor omnitonique, which was exploited commercially by Labbaye after being shown, under the latter's name, at the *Exposition des Produits de l'Industrie* in 1819. Constant Pierre, no doubt led astray by the wording of Labbaye's advertisement in the 1920 Bottin directory, erroneously gives the impression that Labbaye was the inventor, which was not the case. The best known of all the cors omnitoniques was that patented by Charles Sax, of Brussels, in 1824. Other models made sporadic appearances up to as late as the 1870's when one of Gautrot's employees, M. Miramont, made what I believe to have been the last true member of the genus.

The two valves shown in Mr Bate's photograph are of course subsequent additions, and in fact make the instrument most uncomfortable to handle: they have now been removed and replaced by a plain tuning slide as originally fitted. A slotted ring to hold the 'goose-neck' firmly in the selected valvelet still needs to be fitted before the instrument's playing qualities can be properly tested. It is the only omnitonic horn I have ever seen or heard of that gives every semitone from B♭-alt to B♭-basso.

Photographs of the first Dupont omnitonic horn, as well as that of Charles Sax, are given in the Proceedings of the Royal Musical Association, sixty-ninth session, 1942-43.

May I trespass a little further on your valuable space to mention another interesting horn that has lately come into my possession?

This is a rather unusually large bore instrument built on the *Inventionshorn* principle, i.e. with crooks that fit into the middle of the instrument instead of immediately below the mouthpiece. It is made for a left-handed player, that is one using his left hand in the bell instead of, as is more usual, his right, and is fitted with the type of water key covered by the Stuckens (Chas. Sax) patent of 1826 (Fr. pat. No. 1973). The bell is decorated in the Continental manner, though little of the design now remains. The horn is signed 'J. Goodison, Maker, No. 7 Sherrard Stt., Golden Sqe., London'. Goodison, described as a 'French horn and trumpet maker', was in business at this address from 1835 to 1849. In spite of the wording on the instrument I cannot get rid of a lurking suspicion that this horn was actually made by Charles Sax and only finished off by Goodison. It is the only specimen I have ever come across with an English maker's name on it to be built on the *Inventionshorn* principle or to have a decorated bell.

I should be very pleased to hear from any reader who may be

acquainted with another horn by an English maker embodying any of these features.

I am, yours, etc.,

R. MORLEY PEGGE

P.S. The date of Chouquet's catalogue, *nouvelle édition*, given in the footnote on p. 57 of your last number, should, of course, be 1884 and not 1880.

BOOK REVIEWS

SUZANNE CLERCX, *Le baroque et la musique.* (Brussels: Librairie Encyclopédique.) 1948. 248 pp. 10*s.*

The subtitle of this book is 'an essay in musical aesthetics'; it falls into four main sections with a preface and a final note. In the preface the author reviews various attempts at defining the characteristic features of baroque art. Chapter I surveys the music of the baroque age, century by century and country by country. Chapter II attempts to discover the characteristically baroque aspects of this music, dealing in turn with its melody, harmony, rhythm and styles. Chapter III ('from disorder to orderliness') examines the development of polyphony, variation-form, dance-forms and the sonata during the period. Finally Chapter IV is a synthesis of all this information under the title 'limits and features of the musical baroque'. The whole book is a remarkable example of how to approach a problem of this kind by systematic analysis followed by systematic synthesis, and some of Mlle Clercx's findings deserve quotation: 'the musical baroque begins, though very obscurely, in the mid-sixteenth century and is characterized by (1) the break-up of the polyphonic style into writing for double choir, on the one hand, or a tendency to accompanied monody, on the other, (2) the principle of madrigalism—the setting of a verbal text down to its last detail—which destroys polyphony and, by its chromaticisms, harmony as well' (p. 208); this early baroque is followed by the high baroque during which new forms, new melodic, harmonic and rhythmic languages appear (opera, oratorio, cantata, sonata: recitative: new dissonances, the continuo: new tempi, greater contrasts in speed) and this passes imperceptibly into the late baroque, characterized by a tendency to larger, more stable forms. The concerto acquires a fixed succession of movements; the aria becomes standardized as ABA; opera and oratorio become larger and more orderly; instrumental and vocal virtuosity are now subordinated to the demands of the music; rhythmic patterns develop; the principles of classical tonality become established. In a word, *music develops from the baroque towards the classic*, a tendency which the author traces in the earlier history of music as well, summing it up in the phrase 'whenever a major musical form appears, swallowing up all other forms, this is a period of musical classicism' (p. 218).

As examples she mentions seventh-century Roman plainchant, the thirteenth-century motet, the Renaissance Mass, the eighteenth-century sonata. And the signs of the baroque are conflict in duality (e.g. asceticism and virtuosity; melody and bass predominating; music for vast choirs and orchestras and for chamber ensemble; the opposition of differing sonorities). In these findings she is in agreement with Bukofzer in his *Music in the Baroque Era*, though both studies were written quite independently of one another.

Altogether, then, this is a thoughtful and penetrating piece of work, well worthy of the school of Belgian musicology. I am only sorry that the book is marred by a relatively large number of misprints, both in the text and in the musical examples, which will no doubt be corrected in the next edition. Some of the realizations of figured basses distort the intended harmony quite considerably, and the quotations from the keyboard works of Rameau and C. P. E. Bach have been made from completely unreliable editions; indeed, many of the features she draws attention to in C. P. E. Bach are not to be found in the originals at all. But these are small imperfections in a book which, generally speaking, shows its author to be a stimulating and energetic scholar.

D.

ADAM CARSE, *The Orchestra from Beethoven to Berlioz*. (Cambridge: Heffer.) 1948. 514 pp. Ill. 30*s*.

Among the many branches of musical history, the history of the orchestra is one which has hitherto manifested a strangely feeble allure for musicologists. Indeed, among all the principal kinds of instrumental combination, only the military band possesses a literature comparable with that devoted to the individual instruments of which it is composed. For the orchestra, apart from a few studies, mostly in German, on very early orchestras, and some accounts of particular orchestras of more recent date, we have had to rely for detailed historical information mainly upon what musical scores have to tell, which, as Mr Carse has already shown in *The Orchestra in the Eighteenth Century*, is by no means enough. In that book, he ferreted out all the rest and produced a work of reference indispensable to scholars and musicians alike. Now he has followed it with its monumental sequel—a work three times as long although dealing with a stretch of time but half as long.

On reading it one senses a great joy that it is Mr Carse who has broken in this new ground. When the wrong person writes the first big book on a fresh subject, the damage may take years to repair. But *The Orchestra from Beethoven to Berlioz* may be taken up with complete confidence, for in it the author appears once again both as a musicologist of the highest integrity and also as a musician who understands musicians and knows all the trade secrets. Thanks to these qualities he is able to live amongst the subjects of his study; he can trot across Regent Street over into the Argyll Rooms arm-in-arm with Mr Cramer, and then on another day insinuate himself into the pit at the Paris Opéra (Habaneck in charge) on that spare chair next to the horns. So the huge mass of information—all fully documented—which he has collected from

contemporary sources, reads with a perspective which rings true and with a charm which is rare in a work handling so much material. Readers mainly interested in instruments will at once find new and valuable information in the chapters on 'Constitution' and on 'Instruments'. Here are described, for instance, the historic changes undergone by wind instruments during the period, and the muddle about the 16′ octave in the woodwind is deftly unravelled (the Paris performance of *The Creation* with four serpents in the orchestra must have been notable). Proper consideration of the double bass likewise distinguished the earlier book, as did also the great table of orchestral constitutions—some 160 are listed in the new book—a typical Carse feature, saving future musical writers countless hours of hunting for data.

The main body of the book is taken up with the separate orchestras, grouped under countries. Many old friends will be found among the players, most of whom are noticed individually. Some, like David, are remembered by compositions; others, like Baermann, through inventions; others are legendary figures like Dragonetti and Harper. All these are restored to the society of their old colleagues, most of whom here make their début into musical biography. On the whole the musical picture which Mr Carse pieces together is an amazingly familiar one. Just as today, a Paris orchestra was praised for its beautiful ensemble, yet criticized for 'the thin shrillness which seems generic to all wind tones in France' (quoted by the author). Just as today, the eternal London habit of skimping rehearsals set a limit to the finesse of the orchestra while this was to some extent redeemed by the excellence of individuals (notably Willman and Harper). Even a hundred years ago it was recognized that perfection could not be approached without the appointment of a permanent conductor. Such things, as well as the tribute so often paid to principal players, are clues that orchestras of the first part of the nineteenth century aimed at a standard no lower than that aimed at today, which is at variance with the popular belief that our best modern orchestras excel anything ever heard before.

Wind tone has always interested audiences. We read about Vogt's introduction into England (1828) of the French oboe; Mr Carse quotes: 'His tone we did not like at first; we had been accustomed, in our youthful days, to the elder Parke, and to F. Griesbach, whose instruments, partaking of the nature of the clarionet, were remarkably full, rich and less reedy than Vogt's.' All the same the French instrument won, as did the French bassoon, whose quality was also criticized at first: 'Mackintosh, the best bassoon player in England is thrown out to make way for a stranger whose tones . . . excited—not that pleasure and admiration which this instrument has hitherto never failed to produce in the orchestra of the King's Theatre, but downright laughter.' If, as it would seem, the famous 'bacon-frying' effect in face of which Mattheson's *stolze Fagott* hung its head in shame throughout the latter portion of nineteenth century English and French music, is Gallic in origin, perhaps we may now insist that a museum visitor, ruminating before a sturdy old English bassoon by Milhouse or Wood, may never again permit himself to conjure up a swarm of aggressive bees, but instead the 'full round tone' of Mackintosh and his colleagues.

A chapter on conducting—a full account of the growth of the custom—is followed by one on the conductors themselves. Here, too, Mr Carse presents important matter never assembled before. The greatest of the early conductors were those, like Spontini and Habaneck, who were great trainers, and Carse's appreciation of Habaneck comes as a good antidote to the venomous attacks of Berlioz both in his writings and in his recent appearance on the films. The only fault one could find with this excellent book is that among the illustrations, many of which are of great interest, there are quantities of bleak pictures of the interiors and exteriors of opera houses and concert rooms, which might just as well be court rooms for all they are likely to contribute to the reader's knowledge about orchestras. But since this merely continues a long-established custom in musical histories, it should perhaps be respected and not objected to.

A. B.

FRANCESCO DA MOCHENI, *Canon 'Trinitas in Unitate'*.
ANON., *Fancy in C.*
THOMAS TOMKINS, *In Nomine* and *Fantasy in D.*
MATTHEW LOCKE, *Suite in F.*
JOHN WARD, *Fancy in C.*
CLAUDIO MERULO, *Fantasy in G.*
(London: Stainer & Bell; *The Consort Player* series.) Edited by Cecily Arnold and Marshall Johnson. 1949. Score and parts 1*s.* 6*d.* for each number.

It is a particular pleasure to review this excellent series, dedicated to the memory of Canon Galpin, in the pages of a JOURNAL bearing his name. The editors have had many years' experience in the performing of old music on old instruments and their love for what they do is matched by a scholarly approach to the way in which they do it. The works in the above list—the first five are for three instruments and the last two for four—'were originally transcribed by the Editors for use in their own viol consort; and each was selected for some point of interest which appealed to them. It is hoped that they will give equal delight to other players.' The editors, too, are happy in their choice of publishers; Stainer & Bell's long and continuing interest in Tudor music is well-known and much appreciated, and these works are agreeably printed and, what is even more to the point, agreeably cheap. Each number includes notes on its composer and its source, together with practical suggestions for its performance. The music may be played on viols or modern strings; in giving their series as general a title as *The Consort Player*, too, the editors have clearly had all kinds of instruments in mind, old and new, wind and string. The parts have been carefully phrased and bowed, and expression marks have been added. A practical edition indeed, and one that deserves success.

Here are a few scattered remarks on the individual items of the series. *Trinitas in Unitate* is a clever canon 3 in 1 at the fifth and octave above. I should like to add a few *musica ficta* accidentals in bars 3-7 and, again, a few bars before letter D, but I am aware that this is a delicate and disputable point.

The anonymous *Fancy* needs an *F*♮ in the treble at the end of bar 37, and I suspect a misprint in the last bar of the tenor (original version); surely these crotchets should be quavers, occurring a beat earlier? Tomkins' *In nomine* is a rather 'learned' piece with some odd rhythmic twists; a trill is called for at the *F*♯ in the top part two bars from the end. The clever phrasing of the *In nomine* theme is a very commendable device of the editors. In the Tomkins *Fantasy*, I would suggest a trill in the tenor on the third beat of bar 42 and a *D*♮ in the treble eight bars after letter D; this is a very charming work. The Locke *Suite* is taken from his *Little Consort*, written when he was only twenty-one, and it is well worth reprinting; the courante could do with trills in the top part on the fifth beat of bars 7 and 15. The Ward *Fancy* is an excellent companion-piece to the one Augener's published some years ago—sober, dignified music with a fine ending. Lastly, the delicate Merulo *Fantasy* may well be identical with one of the canzone to be found in a MS at Verona (described by Disertori in *Rivista Musicale Italiana*, 1943, pp. 305–321); certainly it begins with the dactylic rhythm typical of the canzona. In bar 16 the alto E should undoubtedly be flattened.

D.

GIOVANNI BATTISTA DELLA GOSTENA, *Intavolatura di liuto*. xii+75 pp.
GIOVANNI MARIA RADINO, *Intavolatura di balli per sonar di liuto*. viii+20 pp. (Florence: Maurri.) Transcribed by G. Gullino. 1949. Unpriced.

Nine years ago the same transcriber and publisher produced an edition of Simone Molinaro's lute-book of 1599 which the present reviewer dealt with in an article in *M & L*, xxviii, 3, pp. 258–61. Here are two new additions to the repertory of sixteenth-century lute music available in modern transcription and Sr Gullino tells me that there are others on the way; it is to be hoped that they will soon be in print.

The method of transcription is that used in the editor's earlier book; the music has been transposed up a sixth and transcribed on a single stave in the treble clef. Phrasings, tempo indications and expression marks have been added much less liberally than in the Molinaro book, and the music is the better for this restraint. Gostena's *Intavolatura di liuto** shows him to have been a very accomplished contrapuntist with a well-developed feeling for subtle changes of texture. In the Florence copy of Molinaro's lute-book, the pages containing the twelfth fantasia, the end of the eleventh and the beginning of the thirteenth are unfortunately missing; this was the copy used by the editor for his transcription and consequently he presents Gostena's work in an incomplete form. It is a pity that he did not restore the missing pages by reference to the British Museum copy, but the interruption of scholarly channels of communication caused by World War II is slow in mending.

* A misnomer, this, for it suggests that the book was a separate publication of Gostena's. The contents are in fact taken from Molinaro's book: twenty-five fantasias and four versions of French chansons.

The Radino book is less important. Radino is an obscure and unproductive composer and we know little of his life. Venetian publishers printed a little music by him; copies are now extremely rare. His lute-book was published by Vincenti in 1592 and the only surviving copy is in the library of the Istituto Musicale, Florence. Gullino has transcribed the whole of it: a long *pass'e mezo* with its equally long galliard, two *padovanas* (both in triple time) and four *gagliardas*. All are elegantly-written music though not at all out of the usual run of late sixteenth-century dances. Nevertheless they help to fill the very large number of gaps in our knowledge of sixteenth-century instrumental music.

D.

GIOVANNI MARIA RADINO, *Il primo libro d'intavolatura di balli d'arpicordo*. vi+ 75 pp. (Cambridge: Heffer.) Facsimile and transcription by Dr R. E. M. Harding. 1949. 21*s*.

It is odd that two scholars working independently should both have hit on Radino, and published modern transcriptions of his music in the same year. Dr Harding has chosen Radino's harpsichord book, also published by Vincenti of Venice in 1592, a unique copy of which is preserved in the Royal Library, Brussels. She rightly claims that it is the earliest printed book '*entirely* devoted to the [harpsichord] named as such', and such a document deserves reprinting. In her interesting and too short preface she points out that the *Arpichordum* is described by Praetorius as a keyboard instrument with steel hooks under the strings to give it a harp-like tone—an interesting comment when read in conjunction with the description of the Theewes claviorgan to be found elsewhere in this JOURNAL. In his preface Radino states that his music will serve for two kinds of instrument, harpsichord and lute, a puzzling statement since the music is printed in the standard keyboard notation of the time (a 5-line stave for the right hand and an 8-line for the left); as it stands it is clearly most unsuited to the lute. A further puzzle is that in Vincenti's catalogues of 1619 and 1649 the book is listed not under harpsichord music but under lute music.

Both of these puzzles can be solved when Dr Harding's transcription is compared with Sr Gullino's. The contents of both books are identical though their order differs, galliards 1, 2, 3, 4 of the lute book corresponding to galliards 4, 3, 1, 2 of the keyboard book. And there are of course a large number of minor differences of detail between the musical texts; what fits the lute does not fit the harpsichord and *vice versa*. Both books were published simultaneously, it is clear. The lute-book provides many valuable corrections of the very carelessly printed harpsichord book and solves most of the problems of *musica ficta* it presents. Dr Harding has not always succeeded in discovering Radino's true intentions about *musica ficta*, it seems, but this was so casually handled in the sixteenth century that discrepancies probably do not matter much.

One rather important criticism of Dr Harding's valuable book must be

made, however. Its first twenty-eight pages consist of a photographic facsimile of the 1592 edition; the remainder consists of her 'transcription' which is in effect little more than a semi-facsimile, since she has retained most of the typographical features of the original except that she uses two 5-line staves and standard modern clefs. She has corrected some misprints and added accidentals where she has judged them to be necessary, always making it clear what is Radino and what is Harding, but it is a very great pity that she has retained such obsolete features as separated quavers and semiquavers, ties in mid-bar, superfluous (by modern conventions) accidentals, irregular barring, and abbreviations such as PA for PRIMA. And her handwritten score is confusingly littered with references to the original pagination and with overlarge bar numbers, so that it is all in all extremely difficult to read. This is not scholarly apparatus but scholarly lumber, and it is a blemish on an otherwise useful book. There are many places, too, when she could have been much bolder in detecting and correcting the very large number of misprints of one kind and another that the original contains; if the note-values had been reduced, as they have been in Gullino's transcriptions, a less misleading idea of Radino's tempi would have been given to the reader, who may not know that a galliard written in minims should be played as though these were fairly fast crotchets.

D.

BOOKS, MUSIC AND PERIODICALS RECEIVED

Violins and Violinists, ed. E. N. Doring. (William Lewis & Son, 30 East Adams Street, Chicago, 3, Ill.) $2.75 a year.

The issues of April, May and June-July 1949 are to hand. Each contains some forty pages of notes and news about string instruments and their players, with a number of illustrations. New information is given about various eighteenth-century makers—Matteo Gofriller of Venice, for instance—and various eminent modern violinists are interviewed and talk about special points of their technique and training. In the April number there is a brief description of the Isaac Fernández Blanco collection of string instruments (Buenos Aires) which includes a Barak Norman gamba, an Amati violin and a fine Giuseppe Guarneri del Gesu violin. The collection is the property of the city of Buenos Aires.

FLOR PEETERS, *Méthode pratique pour l'accompagnement du Chant Grégorien: A Practical Method of Plain-Chant Accompaniment*. (Malines: H. Dessain.) 100 pp. Unpriced.

Practical indeed, and based on much experience of this kind of work: twenty-five pages of examples at the end of the book show what excellent results can be produced if M Peeters' suggestions are followed. The accompaniments are very musical and do not hamper the free flow of the plainchant in the least. The text of the book is printed in parallel columns of French and (well-translated) English.

W. A. MOZART, *Flute quartet* (K.285*a*): ed. Einstein. (London: Hinrichsen.) Miniature score: 8 pp. 1*s*. 6*d*.

J.-M. LECLAIR, *Three original sonatas for two violins*: ed. Herrmann. (London: Hinrichsen.) Parts: 12 pp.+12 pp. 3*s*.

Excellent music, edited and printed with the accuracy and neat appearance we have come to associate with the English branch of Peters' edition.

T. A. ARNE, *Trio-sonata No. 2 in G for two violins, violoncello and continuo*: ed. Murrill. (London: Hinrichsen.) Score and parts: 14 pp.+4 pp.+4 pp.+3 pp. 4*s*. 6*d*.

This is, musically speaking, rather disappointing, though it has been well edited, and if new editions of English eighteenth-century chamber music are to be made the Boyce trio-sonatas are more worthwhile. Players will enjoy it, however.

H. C. L. STOCKS, *British Cathedral Organists*. (London: Hinrichsen.) 32 pp. 3*s*.

A 'collection of names of past and present Cathedral and Collegiate organists', the compilation of which must have involved much painstaking work. The book also includes miscellaneous information about societies, builders, degrees and other matters to do with organs or music in general in this country.

H. HICKMANN, *Miscellanea Musicologica*. (Cairo: Institut français d'archéologie orientale.) 1948. 24 pp. Ill. Unpriced.

Descriptions and discussions concerning (1) an ancient Egyptian harp in the Cairo Museum, (2) the tuning mechanisms used on lyres, harps and lutes in ancient Egypt. Twenty-five drawings and photographs accompany the articles.

H. HICKMANN, *Terminologie arabe des instruments de musique*. (Cairo: the author.) 1947. 37 pp. (duplicated). Unpriced.

An attempt at arriving at a native arabic nomenclature for the instruments of the European orchestra, designed to replace the rather odd transliterated names at present in use (e.g. *fiolonsel* is to be replaced by *al-kamangah al-kebirah*, *oboa* by *al-gurah* and so on). It is not easy to remove foreign words from a language once they have passed into current use—English owes much of its richness to this—and I doubt whether this carefully thought-out set of names will drive out the others, haphazard as they are.

The Guitar Review, ed. Bobri and d'Alessio. (New York: 409 East 50th Street.) Six times a year: $5.00 a year.

The number to hand (No. 9, 1949) is devoted to the lute and contains a most interesting selection of articles dealing with the instrument and its music, enhanced by excellent illustrations, musical examples and so on. In appearance this is quite exceptional among musical journals; its typography and layout are evidently the work of a very experienced designer. An accompanying

brochure mentions that recent numbers have included articles by Segovia, Carlos Chavez, Suzanne Bloch and Villa-Lobos, drawings by Salvador Dali, Marc Chagall and George Giusti, and music by Luis Milan, J. S. Bach, Scarlatti and various modern composers for guitar.

★

Dr Hickmann's article on recent discoveries about early Egyptian instruments will appear in number IV of the JOURNAL; pressure on space made it impossible to include it in the present issue.

★

THE INSTRUMENTS OF MUSIC

By Robert Donington

'Mr Donington sets out not only to provide "a textbook of musical instruments and their working principles", but to answer the fundamental questions "What really happens when we listen to music? What is its raw material? How does it work?" This is a formidable assignment, but he fulfils it triumphantly.' NEW STATESMAN

With 32 halftone plates and 27 line illustrations 18*s. net*

METHUEN

Otto Haas

49A BELSIZE PARK GARDENS
LONDON NW3

*

To be published shortly:

Catalogue No 28
Rare Music & Musical Literature

with a selection of some valuable **Autograph Letters and MSS of Musicians**
300 items

Catalogue free on request

Music and Musical Literature
Autographs and Musical MSS
Purchase and Sale

LEONARD HYMAN

6 EASTHOLM LONDON NW11

carries a stock of books on

Musical Instruments & Early Music

and welcomes inquiries.
Catalogues issued, and sent on request.

Leonard Hyman, 6 Eastholm
NW11 : MEAdway 2753

PETERS-HINRICHSEN EDITION LIMITED

25 MUSEUM STREET LONDON WC1

The Art of Johann Sebastian Bach

A new and comprehensive study of Bach by *A. E. F. Dickinson*, specially prepared for the bicentenary of the composer's death, with many musical illustrations. Price 12/6

Verdi's Last Operas

An illustrated Guide book on Aida, Otello, and Falstaff, by *Stephen Williams*, the well-known scholar, broadcaster, and authority on opera. Price 5/-

Beethoven's Own Words

Beethoven as man and artist revealed in a skilful selection of his own thoughts and words, compiled by *Philip Kruseman*, *translated by Herbert Antcliffe*. Price 6/-